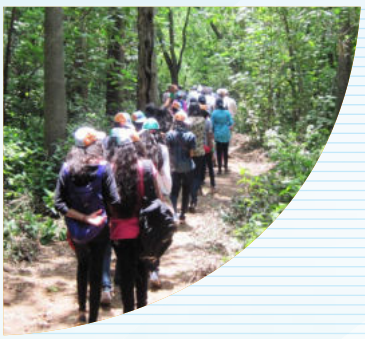
ECOSYSTEM SERVICES IMPROVEMENT PROJECT



EVALUATION OF THE WORKING/EFFECTIVENESS OF FORESTRY EXTENSION SYSTEM THROUGH VAN VIGYAN KENDRAS AND RECOMMENDATIONS FOR ITS STRENGTHENING

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Ecosystem Services Improvement Project

Evaluation of the Working/ Effectiveness of Forestry Extension System through Van Vigyan Kendras and Recommendations for its Strengthening

Indian Council of Forestry Research and Education
(An Autonomous Body of Ministry of Environment, Forest and Climate Change, Government of India)
P. O. New Forest, Dehradun - 248006 (INDIA)
2022

The study on "Evaluation of the Working/ Effectiveness of Forestry Extension System through Van Vigyan Kendras and Recommendations for its Strengthening" is executed under the World Bank funded **Ecosystem Services Improvement Project (ESIP)** being implemented by the Indian Council of Forestry Research and Education, Dehradun.

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NABCONS

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Published by:
Ecosystem Services Improvement Project - Project Implementation Unit
Biodiversity and Climate Change Division
Directorate of International Cooperation
Indian Council of Forestry Research and Education
P.O. New Forest, Dehradun - 248 006 (INDIA)

Citation:
ICFRE (2022). Evaluation of the Working/ Effectiveness of Forestry Extension System through Van Vigyan Kendras and Recommendations for its Strengthening. Indian Council of Forestry Research and Education, Dehradun (INDIA).

सत्यमेव जयते

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निदेशक (अंतर्राष्ट्रीय सहयोग) एवं
परियोजना निदेशक, पारितंत्र सेवायें सुधार परियोजना
भारतीय वानिकी अनुसंधान और शिक्षा परिषद
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FOREWORD

The Indian Council of Forestry Research and Education (ICFRE) has initiated a novel scheme with active collaboration of State Forest Departments under the name of Van Vigyan Kendras in each state/ union territory with the objective of dissemination of various technologies developed by ICFRE and State Forest Departments for various stakeholders. ICFRE institutes have taken lead role in establishment of VVKs in different parts of the country.

ICFRE is implementing the World Bank funded Ecosystem Services Improvement Project (ESIP), and strengthening of the Van Vigyan Kendras (VVKs) is one of the activities under the project. Accordingly, a study was undertaken to evaluate working/ effectiveness of VVKs established in different parts of the country in fulfilling the objectives of forestry extension services to enable technologies from lab to land and make practicable suggestions to improve upon the working and effectiveness of VVKs in future. ICFRE had assigned this study to M/s NABARD Consultancy Services Pvt. Ltd. (NABCONS) as a consultant. The report submitted by M/s NABCONS provides recommendations, strategies and guidelines for strengthening of the VVKs. The report submitted by the consultant was further edited by team of scientists and consultant from ICFRE. The recommendations of the study would become the basis for improvements in the front-line forestry research extension system through strengthening of VVKs.

Financial support provided by the World Bank for Ecosystem Services Improvement Project is gratefully acknowledged. Necessary direction and guidance provided by Sh. Arun Singh Rawat, Director General ICFRE and Dr. Anupam Joshi, Team Task Leader, ESIP, the World Bank for conducting this study under ESIP are gratefully acknowledged.

Various kind of supports provided by Smt. Uma Devi, Former Additional Secretary, Sh. P.K. Jha, Inspector General of Forests, National Afforestation and Eco-Development Board, Sh. Anand Prabhakar, Dy. Inspector General of Forests, other officers and consultants of Green India Mission Division, Ministry of Environment, Forest and Climate Change, Govt. of India for this study are gratefully acknowledged.

Inputs provided by Sh. Anurag Bhardwaj, Former Director (IC) & Project Director (ESIP), officers and scientists of ICFRE Hqs. and its institutes for this study are also gratefully acknowledged.

I am thankful to all the officers and consultants of M/s NABCONS involved in conducting this study and preparation of the final report.

I compliment the team of scientists and consultants of Ecosystem Services Improvement Project, Biodiversity and Climate Change Division of ICFRE Hqs. for editing the final report of study submitted by M/s NABCONS.

Date: 31/03/2022

(Kanchan Devi)

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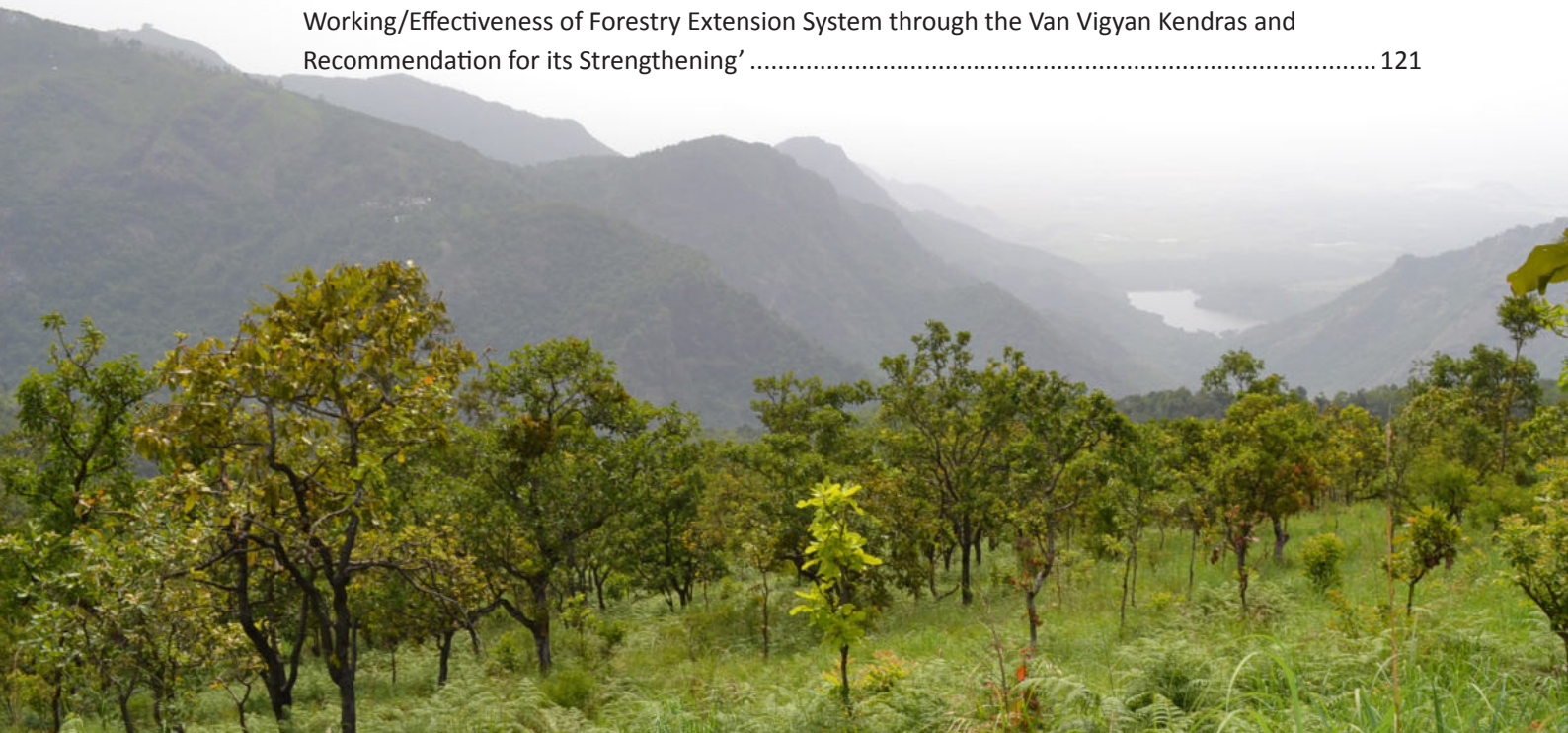


ABBREVIATIONS USED

AFRI	Arid Forest Research Institute
APCCF	Additional Principal Chief Conservator of Forests
ATARI	Agricultural Technology Application Research Institute
CAMPA	Compensatory Afforestation Fund Management & Planning Authority
CAZRI	Central Arid Zone Research Institute
CBNRM	Community Based Natural Resource Management
CCF	Chief Conservator of Forests
CFM	Community Forest Management
CIFOR	Centre for International Forestry Research
CSIR	Council of Scientific and Industrial Research
DFO	Divisional Forest Officer
DG	Director General
DNA	Data Not Available
DWW	Daily Wage Worker
EoI	Expression of Interest
ESIP	Ecosystem Services Improvement Project
FDA	Forest Development Agency
FPC	Forest Protection Committee
FLE	Frontline Extension
FLECB	Frontline Extension and Capacity Building
FRA	Forest Rights Act
FRCLE	Forest Research Centre for Livelihood Extension
FREP	Forest Research Extension Programme
FRI	Forest Research Institute
FRS	Field Research Station
FSC	Forest Science Centre
FTI & RC	Forest Training Institute & Rangers College
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HFRI	Himalayan Forest Research Institute
HPFD	Himachal Pradesh Forest Department
ICAR	Indian Council of Agricultural Research
ICFRE	Indian Council of Forestry Research and Education
ICRAF	International Council for Research in Agroforestry
ICT	Information, Communication and Technology
IEC	Information, Education and Communication
IFB	Institute of Forest Biodiversity
IFGTB	Institute of Forest Genetics and Tree Breeding
IFP	Institute of Forest Productivity
IFS	Indian Forest Service
IGNP	Indira Gandhi Nahar Pariyojana
IUCN	International Union for Conservation of Nature
IWST	Institute of Wood Science and Technology
JFM	Joint Forest Management
JFMC	Joint Forest Management Committee

JICA	Japan International Cooperation Agency
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
KVK	Krishi Vigyan Kendra
MAP	Medicinal and Aromatic Plants
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MoEFCC	Ministry of Environment, Forest and Climate Change
MoA	Memorandum of Agreement
MoU	Memorandum of Understanding
MSME	Micro, Small and Medium Enterprise
MP	Madhya Pradesh
MPT	Multi-purpose Trees
NAP	National Afforestation Programme
NA	Not Applicable
NABARD	National Bank of Agriculture & Rural Development
NABCONS	NABARD Consultancy Services
NARS	National Agriculture Research System
NCA	National Commission on Agriculture
NFP	National Forest Policy
NGO	Non-governmental Organization
NHM	National Horticulture Mission
NTFP	Non-Timber Forest Product
PCCF	Principal Chief Conservator of Forests
PFM	Participatory Forest Management
QPM	Quality Planting Material
RFD	Rajasthan Forest Department
RKVY	Rashtrya Krishi Vikas Yojna
RFRI	Rain Forest Research Institute
RRI	Regional Research Institute
SAC	Scientific Advisory Committee
SDG	Sustainable Development Goal
SFD	State Forest Department
SFDA	State Forest Development Agency
SHG	Self Help Group
TERI	The Energy and Resources Institute
TIC	Tree Information Centre
TFD	Tripura Forest Department
TFDPC	Tripura Forest Development and Plantation Corporation
TFRI	Tropical Forest Research Institute
TGM	Tree Grower Mela
TNFD	Tamil Nadu Forest Department
TPOFA	Tree Plantation Outside Forest Area
UFTA	Uttarakhand Forest Training Academy
VFMC	Village Forest Management Committee
VFPMC	Village Forest Protection and Management Committee
VVK	Van Vigyan Kendra
WBFD	West Bengal Forest Department
WII	Wildlife Institute of India

EXECUTIVE SUMMARY

The Indian Council of Forestry Research and Education (ICFRE) is an apex body in the national forestry research system that promotes and undertakes need based forestry research, education and extension. ICFRE with its nine research institutes and five research centres, located in different bio-geographical regions of the country undertakes thematic research catering to the research needs of forestry and allied sectors on regional basis.

Over the years, ICFRE Institutes have developed a rich portfolio of useful innovations, ready-to-use technologies and relevant best practices/ protocols in different aspects of forestry. The Council has implemented various programmes to effectively disseminate the outcomes of its research to various end users by employing different extension strategies, tools and platforms. In 2007-08, two important programmes to strengthen Front Line Extension (FLE), namely Van Vigyan Kendra (VVK) and Demo Village (DV) were launched by ICFRE for show-casing and demonstrating technologies in the field and capacity building of farmers, rural communities as well as extension workers. The Extension Strategy 2018 of ICFRE emphasised the focus on VVKs as a strategy for front line extension. VVKs were conceptualized as a collaborative effort between ICFRE and State Forest Departments (SFDs).

A total of 31 VVKs were established covering 25 states and 6 Union Territories in partnership with the SFDs. Most of the VVKs were established between 2008 and 2010. The MoU specified the roles and responsibilities of SFD and ICFRE for establishment of VVK. SFD was responsible for providing the land, building and other basic infrastructure to VVK on free of cost, and ICFRE was responsible for providing technical support and funds. The personnel for VVK were to be provided by SFD. Between 2008 to 2018, ICFRE published and distributed 4,91,950 copies of 441 publications on various aspects of forestry and trained 17,559 persons through organising 328 training programmes. ICFRE also established model nurseries and distributed quality seedlings of various species to the local communities.

ICFRE has engaged NABARD Consultancy Services Private Limited (NABCONS) as a consultant for conducting the study on evaluation of the working/ effectiveness of the forestry extension system through the VVKs and recommendations for its strengthening under the World Bank funded Ecosystem Services Improvement Project.

Objective of the study was to evaluate working/ effectiveness of VVKs established in different states for fulfilling the objectives of forestry extension services to enable technologies from Lab to Land and make practicable suggestions to improve the working and effectiveness of VVKs in future.

The specific tasks under the study includes evaluation of the current status of VVKs with respect to its objectives, role, significance, challenges and impact, assessment of the suitability of the current institutional structure and set-up including their budgeting, political and institutional ownership, including the level of integration of VVKs with FDAs and SFD, objectives and functionality of the VVKs, recommendations for reforming the objectives, roles, institutional, financial and technical requirements, and institutional set up and tie-ups for strengthening the VVKs. Following six VVKs were selected by M/s NABCONS for conducting field surveys:

1. VVK, Haldwani, Uttarakhand (Forest Research Institute, Dehradun)
2. VVK, Bikaner, Rajasthan (Arid Forest Research Institute, Jodhpur)
3. VVK, Agartala, Tripura (Rain Forest Research Institute, Jorhat & Forest Research Center for Livelihood Extension, Agartala)
4. VVK, Coimbatore, Tamil Nadu (Institute of Forest Genetics and Tree Breeding, Coimbatore)
5. VVK, Jagatsukh, Manali, Himachal Pradesh (Himalayan Forest Research Institute, Shimla)
6. VVK, Jabalpur, Madhya Pradesh, (Tropical Forest Research Institute, Jabalpur)

Each of these selected VVKs were visited by M/s NABCONS to assess their status and functionality. Data on various aspects of VVKs were collected from primary and secondary sources. Discussions were held with stakeholders. Krishi Vigyan Kendra (KVKs) were also visited to understand their system of functioning and discussed issues related to VVK-KVK linkages.

The status, working and performance of the VVKs could be understood by dividing the period of its existence in two phases. Phase 1 from 2007-08 to 2011-12 corresponds to 11th plan period and Phase 2 from 2012-13 onwards.

Phase 1 involved creation of large number of VVKs in an efficient manner covering most of the states/union territories; creation of extension and demonstration assets at the VVKs; regular training programmes and extension activities; better involvement of the local SFD host unit in the VVK management and activities and relatively low but consistent funding by ICFRE.

In **Phase 2**, most of the MoUs lapsed and could not be renewed timely; funds were not allocated consistently; the assets and resources of the VVK got diverted or degraded; the interest and involvement of SFDs declined in many places and is now episodic; the management set-up of VVKs (informally) changed and extent of engagement of most of the VVKs in extension got limited to organizing a few training programmes.

The creation of VVKs and coverage of the states/ union territories with VVKs was managed efficiently within first 3 years of the launch of the programme and relevant agreements were in place for most of the VVKs. 29 out of 31 VVKs were established in Phase 1. Formal MoUs with state government were signed in all the cases, except for VVK, Coimbatore. The MoU in all cases got either lapsed out and renewal were pending except for Tripura.

The VVK programme performed reasonably well during Phase 1 when ample facilities to support field level extension were created and were involved in various extension activities. The assets

developed included model nursery; space for display of information and technologies borne out of research done by ICFRE Institutes; brochures, posters, booklets on relevant technologies and good practices. Several programmes and training on topics of interest to farmers and rural communities were organized by all the VVKs in the first phase which subsequently decreased after 2014 and VVKs were involved in conducting only a few trainings and provide literature with support from ICFRE.

There was hardly any difference in terms of the purpose, topics, materials, methods used, participants etc. for training and other programmes organized by VVKs and by other agencies/ platforms (SFD, RRI). In many cases, the training programmes were only of 1-2 days duration, focusing more on information sharing or awareness rather than skill building. This also impacts the relevance of the VVKs as unique platform for field level extension.

The original management set-up of ICFRE-RRI as supervising agency and SFD as implementing agency for the VVKs was applied in five out of six VVKs (except VVK, Coimbatore). With the decline in the SFD's interest and involvement, the set-up was modified (informally) and some were brought under direct control of the RRI. This happened in case of HFRI and FRCLE.

The performance of VVKs also varies. Some of them are still quite active and performing well, given the funds and constraints under which they operate. Physical proximity to the RRI thereby allowing the leverage its resources, facilities combined with mobilization of funds from other sources seems to be the main factors behind better performance of some VVKs.

The VVK programme has been managed and implemented mainly by scientists and officials of RRIs providing their time for additional responsibility. There are no full-time staffs exclusively to manage the VVK activities, either at RRIs or in SFDs. Resource persons were occasionally employed from outside for training programmes.

Reduced and uncertain funding is the most important constraint faced by VVKs leading to low interest of SFDs in the VVK programme and have also been the reason for delay in renewal of MoUs by the state governments. The funding guidelines were revised in 2014 to increase the amount of funds for various activities by the VVKs. However, given the amount of funding during last five years, it seems they could never be fully implemented.

Extent, nature and quality of involvement of the SFDs in the VVK programme varied. The physical infrastructure in the form of land or building was allocated specifically for VVK in all the states, except in Coimbatore, where the RRI allocated its own infrastructure for VVK. The capacity and interest of SFDs also varies. For e.g. the SFD of Rajasthan and Tamil Nadu focussed mostly on tree planting outside forest areas and promoting agro-forestry on private lands.

Currently, there is little 'feeling of ownership' within SFDs for the VVK. There is also little evidence of SFDs using VVK platform proactively for extension of their research outcomes. The VVK programme was mostly managed by the Extension Division of the RRIs, and implemented with support from the SFDs. After the MoUs lapsed and the funding declined, the involvement of SFDs further declined leading to diversion of the site and building to other uses.

Most institutions/sites identified for the VVKs had pre-existing nurseries, some of them were already well managed. In few cases (Bikaner), the nursery condition was significantly improved for a period of time. In some cases, the VVK programme was used to develop additional facilities such as compost unit etc. Production of quality planting stock was aimed for demonstration and learning, and thus the number of seedlings raised under the VVK were restricted. Seedlings were distributed/sold to farmers in many cases. Few VVKs managed to continue with seedling production after 2012-13 even when funding for maintenance of nurseries was stopped.

The mandate of field level extension and capacity building is implemented by ICFRE by organizing activities in separate extension schemes/ programmes such as VVKs, Demo Villages, Tree Grower Melas, Direct to Consumer Scheme etc. Though the objectives and aims of the extension through VVKs was not clearly articulated, the focus of their activities were in line with the local needs and requirements. Their focus varied as medicinal plant cultivation in VVK, Jagatsukh (Manali, HP), bamboo cultivation and bamboo-based enterprise in VVK, Agartala, and agro-forestry in case of VVK, Jabalpur and Bikaner.

With respect to convergence and linkages, the need and scope is well recognized. The RRIs have

organized several programmes with KVKs. However, there is no formal institutional linkage between the VVKs and KVKs. Agro-forestry is common area of interest and focus for both KVKs and VVKs and could provide significant opportunities for collaboration. A strategic partnership may be achieved by notifying some KVKs as the extension partners of VVKs and providing them with technical, programmatic and financial support through a formal MoU outlining the purpose and scope as well as roles and responsibilities of each party.

A strategy to involve private organizations, including NGOs would go a long way in creating a multiplier effect for extension activities. This could be facilitated by opening VVK hosting to private institutions (Forest-based private enterprises) as well as NGOs and project-based collaborations between VVKs and private firms to promote technologies and practices aimed at outcomes of common interest. Possibilities also exist for linkages with international organisations like CIFOR, IUCN for an extension on a larger scale through funding from international firms like the World Bank, GIZ etc. Linkage with ongoing programmes in forestry and allied sectors funded by the Central Government like Green India Mission, NAP etc. as well as other agencies (MGNREGA, NHM, etc.) and the State Governments might help in ensuring greater impact. Furthermore, in order to link with community/ farmer groups, the demo village already established by ICFRE may be merge with the VVK programme. Especially in the north-eastern India, where the forest dependency is very high, direct interface with communities on sustainable forest management as well as for strengthening forest-based livelihoods could be a key focus of the DV under VVK.

Planning and monitoring of the VVK programme is not systematic. Though the RRIs prepare an Annual Action Plan for extension, there is no system in place to assess the needs of different stakeholders or consult the partner agency (SFD) to inform the planning process. Sometimes, the SFD request the RRI for some training programme, and if funds are available, they are planned under VVK head. The RRIs submit the details of activities to the ICFRE, but there is no system for monitoring and evaluation of the VVK's activities.

Record keeping and documentation of VVK's activities has been relatively poor. Details of different activities, including details of participants/ beneficiaries are not well maintained. There is little follow-up after the activity to understand the outcome/impact of the capacity building or extension initiatives. Most of the information related to success of VVK programme is anecdotal.

Awareness about the VVKs is low. Even within the SFDs, many officials are unaware of the VVK programme. There is negligence of VVKs due to lack of efforts to create visibility -- no signboards, not mention on the brochures/leaflets. VVKs have, till now, been unable to develop an independent distinct identity for itself, and its efforts/activities get subsumed within the larger and better-known identity of RRIs or host institution.

Major Recommendations for Strengthening the VVK System

Mandate of the VVKs should be expanded to include various types of FLE activities and capacity building focusing on skills. VVKs should be made the primary platform for FLE in rural areas targeting farmers, rural communities especially youth, women and extension workers. All the current and future extension programmes and schemes of ICFRE targeting these groups should be merged under the VVK platform and implemented for greater synergy, efficient management and better potential impact. The profile for VVKs should be elevated from "a programme/scheme" to an "institution for front-line forestry extension" of ICFRE.

The target group should be farmers, forest-dependent communities and individuals or communities in many States with natural or planted forests on their private or community land. Visions, mission and mandates of the VVK for FLE should be clearly articulated.

To strengthen the VVK network, ICFRE should aim to create and support 100 to 200 robust VVKs covering all the agro-ecological regions in a State over next 10 years.

The strategy for new establishment should begin with the identification of the high potential districts for VVKs by the RRIs and each VVK must serve a cluster of 2 to 4 districts. Wherever feasible, the focus should be on developing the existing VVKs as 'models' for FLE and capacity building of farmers and forest-dependent communities in forestry and allied sectors.

Though the SFDs should remain a key partner for extension and a preferred host for VVKs, the VVK programme should be opened for partnership with universities/ colleges with forestry/ agro-forestry curriculum; Institutions/ NGOs working in forestry

and allied sector. The selection of potential partner for hosting VVKs should be demand-led, application and appraisal-based process. Appropriate institutional arrangements are needed to facilitate and manage the process of selection of partners.

So far as institutional setup and design of VVK is concerned, the focus should be on ICFRE Institutes, their field units (FRS) and Centres as host institution. These should be developed as 'model' VVKs working under the direct management of the Extension Division of the RRIs, and an assessment of the potential workload should be done to see if the Extension Division needs to be strengthened with additional human resource. Safeguards against diversion of assets created with ICFRE investment should be built in the MoU and agreements with host institutions to protect it.

The VVKs should be capacitated with at least 3 full time staff, headed by a Scientist, as the VVK Coordinator. The activities and human resource should be fully funded by ICFRE while partial funding for infrastructure development may be allowed by ICFRE.

Two investment models for modified VVK system are being proposed. In the low investment model, the proposed budget comes out to be INR 45 million per VVK while it goes up to INR 92 million per VVK in the high investment model over five years.

Different options need to be explored for adequate and ensured funding. They include, extension projects funded by bi-lateral/ multilateral agencies; creating a system for building an FLE cost within the relevant research proposals; leveraging funds from on-going programmes in forestry and allied sectors (a percentage can be fixed for extension through ICFRE-VVKs); creating a Revolving Fund for the VVKs for one time grant to sustain certain core activities (nursery, production of other technological products) and generation of funds by the host institution from other sources. The VVK must maintain all the records related to financial transactions.

The VVKs should be allowed to produce technological products – seedlings, seeds, bio-fertilizers, bio-pesticides etc. – for sale to generate sufficient funds to sustain some of its core activities on its own. One time grant for Revolving Fund can be provided by ICFRE, and a period can be determined for repayment to ICFRE. Guidelines for the management of Revolving Fund should be prepared. VVKs should maintain at least two bank accounts - one for receiving the grant funds from ICFRE and the other for Revolving Fund.

A database of technologies and good practices developed by the RRIs/Centres, SFDs, and other institutions involved in forestry and allied sectors should be prepared and region-wise list of technologies/ practices for extension through VVK should be identified and prioritized.

The Information Communication & Technology should be opted with focus on practical training and experience-based learning encouraging participatory research, system of handholding and further support and user-friendly IT-based extension and mobile-based advisories.

Suggestion for stronger linkage with KVKs include – increased frequency of interaction; jointly funded projects on agro-forestry leveraging the resources of both KVK and VVK; notifying some of the KVKs (especially in high agro-forestry potential areas) as VVK and financially supporting them (will require agreement with ICAR); selecting some of the institutions currently hosting KVKs as host institution for VVKs.

Robust PIMER (planning, implementation, monitoring & evaluation and reporting) systems should be developed, and standard operating procedures related to these should be prepared/ adopted. M&E systems should be supported with proper documentation and record keeping for periodic monitoring and evaluation.

A draft strategy and guidelines for establishment and management of VVKs under the modified VVK system is proposed for consideration of ICFRE in order to establish a robust FLE system. It is suggested that various aspects of the proposed strategies and guidelines are carefully analysed for their feasibility and implications, through a special committee appointed for the purpose.

Recognition and visibility of the VVKs should be improved to make it as VVK brand. A common identity of VVKs could be created with a common name and common signage, prominently displayed at various suitable spots. Ideally, the VVK should have its website and social media presence. Information regarding various schemes of Central and State Governments related to forestry, agro-forestry, JFM should be compiled, published and annually updated at the district level by the VVK. System of performance-linked additional support based on transparent criteria and guidelines may be established. Moreover, the VVKs showing excellence performance in certain disciplines could be considered as centers of excellence and supported suitably to undertake greater responsibility. VVK

must be encouraged to organize annual events where peoples /community representatives from villages interface with farming communities indulge in innovative and progressive farming.

Proposed Strategies and Guidelines

To develop VVKs as effective, efficient and vibrant platforms for front-line extension, a set of guidelines with their mandate, establishment, infrastructure, programme and financial management, administration etc., is crucial. The following guidelines are suggested:

The Institutional Set-up of VVK should be managed according to the policies of the host organization, except in those aspects where ICFRE formulates and recommends a different policy for better functioning and management of VVKs.

The mandate would be technology assessment and demonstration for its wider application and capacity building of farmers, tree growers and forest-dependent people on forestry and allied activities. The domain of VVK activities would include data collection & documentation; need assessment, prioritization and planning; technological interventions; development of demonstration Nurseries; capacity building and outreach activities.

An incremental approach with the identification of potential districts for VVK establishment based on criteria of agro-forestry, farm forestry etc., followed by selection of host institutions on some eligibility criteria and well-defined roles and responsibilities of ICFRE, RRI and host institutions should be opted.

Fulltime dedicated and competent human resources working for VVKs should be managed to plan, implement the front-line extension and capacity building activities for its effectiveness.

As ICFRE would provide financial support for creation or improvement of infrastructure facilities for the VVK, based on the proposals of the host institutions. It is envisaged that most of the host institutions would have some existing basic infrastructure, which they would provide for the exclusive use of the VVK.

The planning and implementation of VVK activities based on the needs identified for the development of agro-forestry, farm-forestry and forest-based livelihoods in the district in general and the cluster of adopted villages, in particular. The perspective plan would include the components: technology assessment through on-farm trials, Front-line demonstration, training & capacity building, extension activities, production of quality technological products in model nurseries and demo units of forest-based enterprises and infrastructure development.

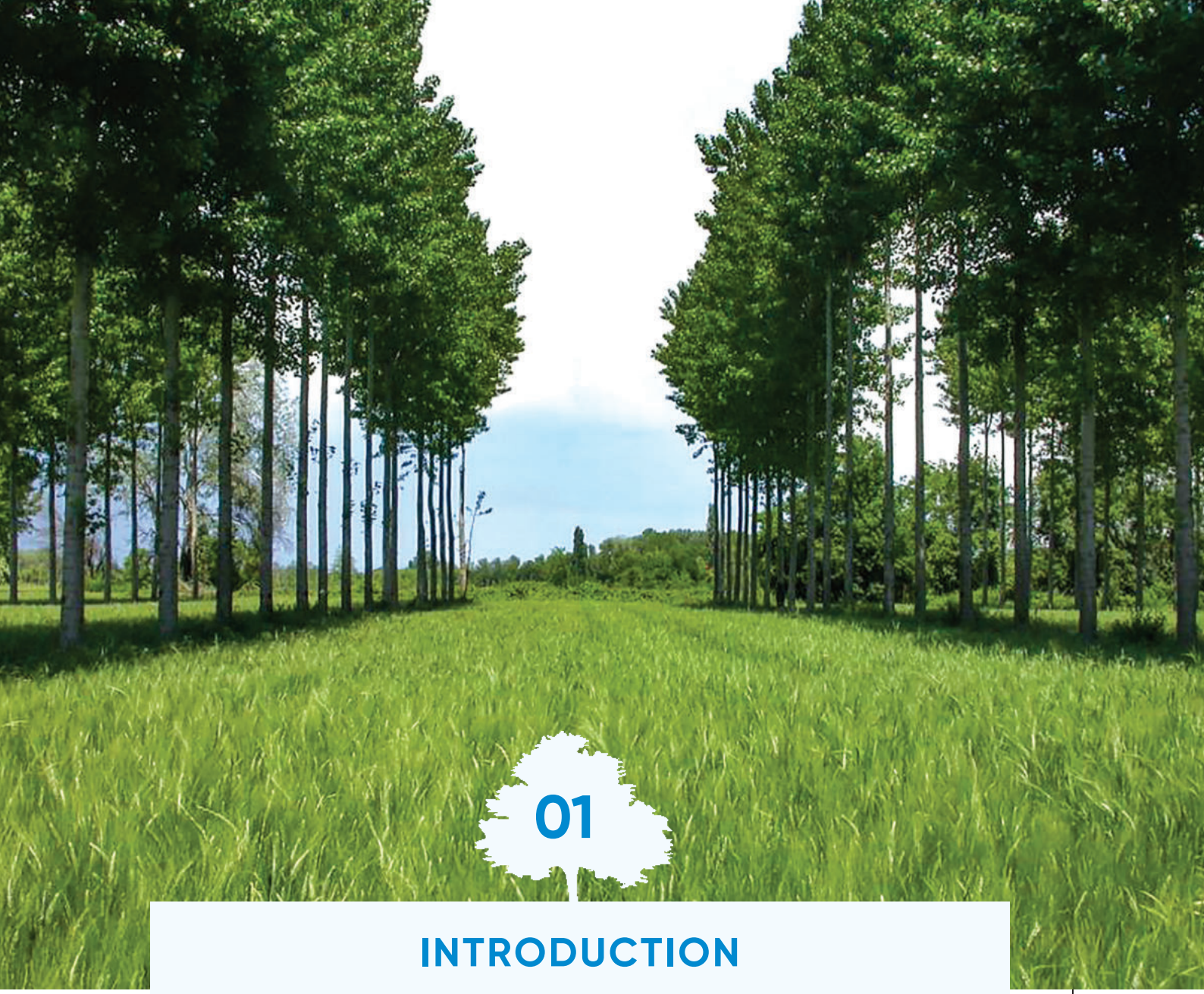
Reports and publications by VVK could facilitate smooth implementation of activities.

The VVK system would need coordination and monitoring at multiple levels – National, Region, State and District. Appropriate institutional arrangements should be created at different levels for coordination, monitoring and evaluation.

A strategic partnership can also be achieved by notifying KVKs as the extension partners of VVKs and providing them with technical, programmatic and financial support. SFDs should be a key strategic partner for VVKs.

So far as funding is concerned, the ICFRE would be the main funding source for VVKs for personnel, creation/expansion of its infrastructure and programme activities with options opened through externally aided projects.

Finally, to increase the visibility and awareness of VVKs, effort must be to create unique identity of VVKs with a common name and common signage, its own website and social media presence.



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INTRODUCTION

The Indian Council of Forestry Research and Education (ICFRE or Council) is an autonomous apex body for research and education in the national forestry research system under the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India. It has nine research institutes (hereafter also referred to as Regional Research Institutes or RRIs) and five research centres located in different bio-geographical regions, which undertake thematic research and cater to the research needs of forestry and allied sectors on a regional basis. The institutes are: Forest Research Institute (FRI), Dehradun; Himalayan Forest Research Institute (HFRI), Shimla; Arid Forest Research Institute (AFRI), Jodhpur; Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore; Institute of Wood Science and Technology (IWST), Bengaluru; Rain Forest Research Institute (RFRI), Jorhat; Institute of Forest Productivity (IFP), Ranchi; Tropical Forest Research Institute (TFRI), Jabalpur and Institute of Forest Biodiversity (IFB), Hyderabad. The research centres are: Forest Research Centre for Bamboo and Rattans (FRCBR), Aizawl; Forest Research Centre for Livelihood Extension (FRCLE), Agartala; Forest Research Centre for Skill Development (FRCSD), Chhindwara; Forest Research Centre for Eco-Rehabilitation (FRCER), Prayagraj; and Forest Research Centre for Coastal Ecosystem (FRCCE), Visakhapatnam.

The Council's mission is *"to generate, advance and disseminate scientific knowledge and technologies for ecological security, improved productivity, livelihoods enhancement and sustainable use of forest resources through forestry research and education", contributing to its vision of "long-term ecological stability, sustainable development and economic security through conservation and scientific management of forest ecosystems"* in India. The objectives of the Council are to undertake, aid, promote and coordinate forestry education, research and its applications; provide technical assistance and support to various stakeholders for forest protection, afforestation, agro-forestry and allied activities; develop appropriate forest based technologies, processes and products for sustainable resource use, livelihoods and economic growth; provide livelihood support to forest dependent communities through transfer of scientific knowledge and appropriate forest-based technologies; develop and maintain a national library and information centre for forestry research and allied sciences; and develop forestry extension programmes and propagate the same.

The Director General (DG), ICFRE is the chief executive of the Council and implements the Council's mandate under the supervision of the Board of Governors of the ICFRE Society. The scientific, technical and administrative personnel of the Council include a permanent cadre of scientists and technical staff, as well as the forest officers appointed on deputation for fixed tenures. The activities of the Council are organized under five Directorates viz. Administration, Research, Education, Extension and International Cooperation. The main source of funding of the Council is through grants-in-aid from the MoEFCC. The Council also generates its own resources by undertaking research projects and consultancies for user agencies as well as through externally aided projects and registration of patents.

According to its vision statement articulated under ICFRE Vision 2030, the Council aims *"to be positioned as one of the world leaders and centre of excellence in forestry research and education"* and align its research to *"national priorities, international commitments, public concerns and aspirations of the people"*. In addition to core areas of forestry research, ICFRE also aims to address the issues of land degradation, river systems, climate change, hydrological problems, natural disasters, biodiversity loss, deteriorating urban landscapes, pollution, livelihood and sustainability in a holistic and inclusive manner.

1.1. Forestry Research and Extension by ICFRE

ICFRE research is mainly focused on the six broad thrust areas: (i) Managing forests and forest products for livelihood support and economic growth (ii) Biodiversity conservation and ecological security (iii) Forests and climate change (iv) Forest genetic resource management and tree improvement (v) Forestry education and policy research to meet emerging challenges, and (vi) Taking research to people through effective extension mechanism. Over the years, ICFRE Institutes have developed a rich portfolio of useful innovations, ready-to-use technologies and relevant best practices/ protocols under all the thrust areas. The Council has also conceptualized and implemented various programmes to effectively disseminate their outcomes to various users by employing various strategies, tools and platforms, including publications, seminars, symposiums, workshops, fairs, exhibitions, radio talks and specialized extension schemes. The extension activities of ICFRE are managed by the Directorate of Extension at ICFRE, which is further supported by the Extension Divisions of the RRIs.

A Forestry Research Extension Programme (FREP) was first formulated by ICFRE in the year 2000. Since then, the programme has been reviewed and revised in the years 2010 and 2018, respectively. In 2012, twelve extension strategy statements were listed, clearly identifying the focus and nature of the extension activities. The current extension strategy and action plan relating to the period 2018 to 2023, provides the guidelines for the extension of research outputs of RRIs. The strategy focuses on a technology-specific extension, wherein the institutes are expected to identify and list the relevant technologies for dissemination. The

current strategy also focuses on the establishment of successful demonstration models for the dissemination of information and technologies in all agro-ecological zones as a delivery mechanism for the extension. Extension strategies in the form of demo villages and Van Vigyan Kendras (VVKs) are given primacy to showcase such technologies. Apart from conventional extension activities, ICFRE implemented certain centralized extension schemes as indicated in the Table 1.

Table-1: Centralized Extension Schemes of ICFRE

Extension Schemes (pre-2018)	Extension Schemes (post 2018)
1. Van Vigyan Kendra (VVK), since 2007-08 2. Networking of VVKs with KVKs 3. Demo Villages (DVs), since 2007-08 4. Tree Grower Melas (TGMs) 5. Direct to Consumer (DTC), since 2011	1. Establish more VVKs 2. Stronger networking of VVKs with KVKs 3. Shifting of DV every 3rd year 4. More frequent TGMs 5. Modified Direct to Consumer Scheme 6. Vigyan Rath (Extension Van) 7. Technology Demonstration Centers (TDCs) 8. Social media campaigns 9. Preparation of documentaries 10. Updation of extension page at ICFRE website 11. "Prakriti" an environmental awareness programme for youth 12. Green Skill Development Programme (GSDP) under ENVIS Centers at ICFRE institutes

Source: Extension Strategy & Action Plan 2018, ICFRE

The ICFRE Vision 2030 sets out the following objectives for forestry extension, considering the proposals under ICFRE Extension Strategy 2018:

1. Intensification of 'Direct to Consumer' scheme to demonstrate research outputs to different user groups.
2. Increase the number of VVKs and extend it to all blocks in the country and develop sound linkages with Krishi Vigyan Kendras.
3. Use of Information Technology for faster and cheaper dissemination.
4. Opening up of comprehensive Intellectual Property Rights Cell.
5. Develop incubation centers for upscaling, financing and commercialization of technologies.
6. Adopt aggressive extension.

1.2. Van Vigyan Kendras

In 2006-07 the Working Group on Forestry Research, Education and Extension of the Planning Commission for Eleventh Plan period recommended the establishment of Van Vigyan Kendras or Forest Science Centres (VVK/FSC) for strengthening forestry research extension. The purpose was to more effectively reach the potential users of their research and technologies by showcasing and demonstrating the technologies in the field to farmers, forestry extension workers, forest-based industries, etc. In 2007-08, ICFRE initiated the VVKs as a scheme for centralized extension in partnership with the State Forest Departments (SFDs) to help disseminate technologies and outcomes of research by RRIs as well as SFDs. A broad guideline regarding the division of roles and responsibilities between the ICFRE and the SFD was developed, subsequently revised in 2014, based on which Memorandum of Understandings (MoUs) signed between ICFRE and the State Governments. The division of responsibilities is indicated in the Table 2.

Table-2: Division of Responsibilities Between ICFRE and SFD for VVK

ICFRE Responsibilities	SFD Responsibilities
• Provide support for literature in the form of brochures, pamphlets, newsletters etc. on relevant aspects of forestry, technologies and products • Provide support for training/capacity building covering topics related to forestry and allied sectors and forest-based enterprises • Provide support for establishment and maintenance of model nursery for demonstration of nursery practices and supply of quality seedlings • Financial support for training equipment, demonstration, engaging personnel for VVK related tasks, other overhead expenses, etc.	• Appointment of Nodal Officers and close coordination with concerned ICFRE institute • Providing and sharing of literature • Provide infrastructure including building and fixtures • Provide land for model nursery and trials • Provide electricity and water supply • Provide personnel for VVK activities – part of the expense on personnel to be met from financial assistance by ICFRE • Identify and promote participation of farmers and communities that makes other to emulate

Source: ICFRE Guidelines for VVK 2008

Broadly, the SFD was responsible for providing the physical infrastructure including land, building, water and electricity supply apart from human resources, whose expenses would be borne by the ICFRE. SFDs were also expected to share the literature based on research conducted by their Research Wing. ICFRE was responsible for funding the operations and activities of the VVK, including expenses for the personnel, apart from providing technical support for establishing a model nursery, display items for VVK centre, literature for distribution, training/extension equipment and organizing training programmes. In 2014, it also included provision for overhead expenses for VVK operations. Starting with two VVKs in 2007-08, a total of 31[1] VVKs have been established spread over 25 states and six Union Territories. The list of existing VVKs is placed as Annexure 1.

Source: Compiled by Study Team based on data provided in Annual Reports of ICFRE

Fig. 1: Timeline of VVK establishment

Under the VVK programme, the ICFRE has published and distributed 4,91,950 copies of 441 publications on various topics; trained 17, 559 persons through 328 trainings for 799 days over ten-year period (2008 to 2018). It also established 26 model nurseries and distributed 1,40,829 seedlings of different species during the period. As per the Extension Strategy and Action Plan (2018 to 2023), 24 more VVKs are proposed to be established, taking the total number of VVKs to 53 by 2023. At the time of the study, more VVKs are in the process of getting established and some of them are reported to be in the advanced stages.

[1] ICFRE Annual Report 2018-19 (page 108).

Source: ICFRE Annual Reports

Fig. 2: Training Conducted by VVKs

ICFRE engaged M/s NABCONS as a consultant to carry out study on the current status, functioning and effectiveness of VVKs in order to identify measures to improve the VVK system. The fieldwork for the study was carried out between October 2020 and January 2021. Online and telephonic consultations with relevant institutions, key informants and experts/resource persons continued up to April 2021. This report presents the findings of the study and suggestions for improvement in the VVK system.

02

OBJECTIVES AND METHODOLOGY OF STUDY

2.1. Objectives and Scope of the Study

The main objective of the study was to evaluate working/effectiveness of Van Vigyan Kendras established in different states in fulfilling the objectives of forestry extension services to enable technologies from Lab to Land and make practicable suggestions to improve upon the working and effectiveness of VVKs in future.

The study plans to look into the current status of VVKs and how these can be strengthened. The detailed guiding document would provide specific strategies/ guidelines/ plans/ recommendations for strengthening the existing VVKs, covering the funding, staffing, mode of functioning and developing effective networking of VVKs with Krishi Vigyan Kendras (KVKs).

The specific objectives (tasks) of the study include:

1. To evaluate the current status of existing VVKs in at least six (06) states with respect to its objectives, role, significance, challenge and impact of VVK.
2. To assess the suitability of the current institutional structure and set up of the VVKs including their budgeting, and institutional ownership, including the level of integration of VVKs with FDAs and SFDs.

3. To consult a wide range of experts and other stakeholders on the purpose, objectives and functionality of the VVKs. Stakeholders should include officials of the MoEFCC, SFDs, Forest Secretaries, Private Sector, Forest-based MSMEs, NGOs, Farmers, etc.
4. To propose recommendations for reforming the objectives, roles, institutional, financial and technical requirements, institutional setup and tie-ups for strengthening the VVKs based on the findings of the evaluation.

2.2. Approach and Methodology for Study

This section describes the approach and method adopted for conducting the study, including sampling of VVKs, criteria and indicators for assessment, tools for data collection and analysis and limitations encountered.

2.2.1. Sampling of VVKs for Study

Seven VVKs from seven states were suggested for a visit and detailed study by ICFRE covering various geographical regions and institutes. Two VVKs from the northern region, one from the western region, two from the eastern region and one each from the central and the southern region were shortlisted. Details of the VVKs surveyed by ICFRE for the study are provided in Table 3.

The study team visited all the seven VVKs. However, VVK, Hizli in West Bengal was subsequently excluded as it became clear that the concerned VVK is not yet functional as the MoU with the State Government is still pending. The study in West Bengal was limited to discussions with officials of the West Bengal Forest Department (WBFD) regarding forestry extension in general and the need/relevance of VVK in particular.

Table-3: Details of surveyed VVKs

Name of VVK	State	Parent Institute	Partner (Host) Institution	Year of establishment
VVK, Haldwani	Uttarakhand	FRI, Dehradun	UFD (UFTA)	2008
VVK, Bikaner	Rajasthan	AFRI, Jodhpur	RFD (IGNP Phase II Forest Div)	2009
VVK, Agartala	Tripura	RFRI, Jorhat	TFD (Research Wing) /FRCLE	2008
VVK, Coimbatore	Tamil Nadu	IFGTB, Coimbatore	TNFD (Extension Wing)/IFGTB	2009
VVK, Manali[2]	Himachal Pradesh	HFRI, Shimla	HPFD/HFRI	2008 / 2013
VVK, Jabalpur	Madhya Pradesh	TFRI, Jabalpur	MPFD (Research & Extension Wing)	2008
VVK, Hizli	West Bengal	IFP, Ranchi	WBFD (Development Circle, Kharagpur)	MoU not yet signed

2.2.2. Literature Review

Relevant documents from ICFRE related to forestry extension and the VVK system were reviewed. These included, *inter-alia*, Annual Reports of ICFRE from 2007-08 to 2018-19, Extension Strategy and Action Plan of ICFRE, 2018-23; ICFRE Vision 2030 document, Progress Report of VVKs prepared by RRIs, Training Reports of VVKs. Information related to research and extension resources and activities available on websites of RRIs was also reviewed to understand the focus of their

[2] The VVK was initially located at FTI&FC at Sundernagar, and was shifted to FRS at Jagatsukh, Manali in 2013.

extension activities. Besides, documents related to the KVKs establishment process, management system, activities and characteristics of KVK based FLE operating under ICAR were also reviewed. This provided another framework for the assessment of the VVK system. The list of various documents reviewed is provided in Annexure 17.

2.2.3. Criteria and Indicators for Assessment of VVKs

The following parameters were finalized for assessment of the status and functioning of VVKs in consultation with ICFRE:

- Physical infrastructure, including training and extension facilities/equipment available with VVKs
- Human resources available with VVKs
- Financial resources available to the VVKs
- Activities and programmes (technology assessment, dissemination & training) undertaken by VVKs
- Outputs and outcomes of VVKs activities
- Systems and procedures related to VVKs functioning and management

For each of the criteria, various indicators were identified for which information was collected through questionnaire surveys, field visits and interviews.

2.2.4. Data Collection for Assessment of VVKs

Following tools were adopted for the data collection:

Visit RRIs, VVKs and KVKs: The study team visited six ICFRE institutions viz. five RRIs and one (FRI, Dehradun; AFRI, Jodhpur; HFRI, Shimla; TFRI, Jabalpur; IFGTB, Coimbatore and FRCLE, Agartala). The sites where the sampled VVKs are located were also visited to get the first-hand observation about the status of the resources and infrastructure developed/available with them. Relevant documents, related to VVK programme, were collected and the officials who were in-charge of the VVKs were interviewed. Detailed discussions were held on issues related to management and functioning of the VVKs with RRIs. The schedule for visits to different States, RRIs, VVKs and KVKs is provided in Annexure 4 and Annexure 5.

Checklist and Data Collection Format: A checklist was developed to understand the status and arrangements at the VVKs and to facilitate discussion on various related issues during field visits. Subsequently, a data collection format was shared with the RRIs to address the data/information gaps. The checklist and the data format are provided in Annexure 6 and Annexure 7, respectively.

Stakeholder Consultations: Consultation with different stakeholders on role, objectives and working of the VVKs was done. These included the officials and scientists from RRIs, the State Government officials and field staff. Other stakeholder groups - mainly NGOs working on forest and livelihoods, and forestry experts and officials - shared their views primarily on the need and relevance of strengthening extension for forestry and allied sectors. Meetings were held with Senior Forest Officials (PCCF, APCCF, CCF) as well as some field staff (Range Officers/Foresters) to understand their perspectives-roles, significance and activities of VVKs. Beneficiaries of plant distribution could not be contacted due to the absence of records. Wherever possible, interviews were conducted with people who participated in the extension or training programmes of the Institute/VVK. The details of stakeholder meetings and consultations are included in Annexure 5.

A National Stakeholder's Consultation Workshop on 'Evaluation of the working/Effectiveness of Forestry Extension System through the Van Vigyan Kendra and Recommendation for its Strengthening' was organized on 26 August 2021 in dual mode (online and offline). Apart from senior officials and scientists of ICFRE and its institutes, the workshop was attended by representatives from the World Bank, MoEFCC, NABCONS, ICAR and its institutes, Agricultural Universities, KVKs, NGOs, and SFDs. The proceedings of the workshop are provided in Annexure 19. The suggestions made by participants have been incorporated in the report.

2.2.5. Analysis of VVKs and VVK System for FLE

The status and functioning of VVKs were assessed adopting three different angles – first with respect to the programme mandate, activities and funding; second, in comparison to other VVKs and lastly with respect to a well-established front-line extension (FLE) system in the form of KVKs.

Comparative analysis of VVKs: The data on infrastructure, human resources, functioning, activities, institutional set-up, and management system etc., of sampled VVKs were compared to assess their relative performance and to identify factors that may be responsible for differences in performance. Due to the availability of limited data, the performance evaluation criteria planned at the inception stage of the study was revised to include i) number and types of extension and capacity building activities undertaken; ii) development and maintenance of infrastructure, assets and learning resources; iii) linkage with other institutions and programmes; iv) leveraging funds from other sources.

Comparative analysis of VVK and KVK systems: Considering that VVKs were inspired by the KVK system for front-line extension, a comparative analysis of the two systems was done with respect to the establishment process, institutional setup, management system, infrastructure and human resources, funding, activities, etc. This was done with the caveat that agriculture and forestry research extension differ significantly in some key aspects and to analyse if some of the best practices under the KVK system can also be adopted for VVKs.

SWOT analysis: Strengths, weaknesses, opportunities and threats (SWOT) were identified for the existing VVK system based on the study findings, stakeholder's consultations and discussions with domain experts and resource persons familiar with extension systems of ICFRE as well as that of ICAR.

2.2.6. Developing Strategies and Guidelines for VVKs

The ideas and suggestions for the establishment and management of VVKs for effective front-line extension were derived from multiple sources, including:

- Suggestions made by RRIs
- Suggestions from stakeholder consultations with other stakeholders such as SFDs
- Best practices for front-line extension
- SWOT Analysis and factors responsible for performance gaps
- Suggestions by domain experts on extension, forestry and institutional development
- Management guidelines for KVKs

2.3. Limitations Encountered

The period – from the time when the first few VVKs were established in 2008 to the time when this study was undertaken – can be divided into two phases. The first phase overlapped with five years of the Eleventh Plan period (2007 to 2012), and is characterized by relatively higher and regular investment in the VVKs. During this phase, all the VVKs currently existing were established based on MoUs with the State Governments, which subsequently expired in 2012 and the situation related to their renewal could not be fully clarified in many places. The second phase – 2013 to date – is characterized by low and irregular investment in VVKs; in some years, no funds were allocated for VVK activities. VVKs in some places exist only as an abandoned institution or in a very different form than originally conceptualized due to the termination of the MoU and changes in investment strategy for the VVKs. This was not foreseen at the beginning of the study.

Another major limitation was a low level of awareness about the VVKs among the stakeholders other than the RRIs and a limited number of SFD officials. Due to the low level of activities by VVK, the identity of the VVK has been subsumed within the identity of the host institution. Few NGOs or forest-based industries or participants in the training programmes, contacted by the study team, were aware of VVKs to provide their opinion about it.

03

STATUS AND FUNCTIONING OF VAN VIGYAN KENDRA

This chapter presents the findings related to the status and functioning of the six VVKs sampled for the study based on data collected from secondary sources, questionnaires, site visits and stakeholder discussions.

3.1. VVK, Haldwani (Uttarakhand)

VVK, Haldwani was established in the year 2008 by ICFRE through Forest Research Institute (FRI), Dehradun and Uttarakhand Forest Department (UFD). It is one of the six (06) VVKs created by FRI and is located at a distance of about 280 km from the FRI campus. A MoU for five (05) years was signed with the State Government for establishing the VVK. After the expiry of the MoU in 2012, the material and display items were handed over to the Forest Department /UFTA.

Interpretation Centre at VVK, Haldwani

Consequently, no extension activities were taken up or supported by VVK for the two years (2013 and 2014). The facility of VVK is since being used only for organizing training programmes. A request for renewal of MoU up to the year 2025 for VVK, Haldwani is reportedly pending with the State Government.

The VVK, Haldwani is located within the premises of the Uttarakhand Forest Training Academy (UFTA) and the Director, UFTA is the nodal person on behalf of the State Government. In the beginning, the VVK was provided space at Shatabdi Bhavan at

UFTA. After 2012, it was shifted to the "Interpretation Centre" of the "Biodiversity Park" within the UFTA premises. It is not entirely clear whether the land and building earlier earmarked for VVK were subsequently used for establishing the Biodiversity Park. With the Biodiversity Park Interpretation Centre as the main identity, the VVK does not evidently come forth as a functional entity. It is understood that in the absence of adequate and regular financial support, coupled with the expiry of the MoU in 2012, UFTA decided to use the available resources for alternate purposes. While the Biodiversity Park is very well designed, with a well-maintained nursery and serves as an excellent learning resource on biodiversity and conservation, it is not clear how much it serves the mandate of the VVK.

Infrastructure and Human Resource: UFTA has its own well-developed infrastructure

Nursery at VVK Haldwani

and human resource for organizing training programmes. The site allocated to the VVK has good infrastructure for a Biodiversity Park, including a nursery and an interpretation centre. In theory, these facilities are also available for use by VVK, as and when required. However, the facilities are more geared up to showcase the relevant research outcomes on biodiversity conservation than any other aspect such as agro-forestry or commercial tree or MAP (Medicinal and Aromatic Plants) cultivation.

The VVK, Haldwani does not have full-time or even part-time personnel working exclusively for the VVK. At FRI, the Head of Extension Division and at the UFD/UFTA level, the Biodiversity Park in charge (an IFS officer) look after the VVK related matters. The primary role of the Park in charge is to develop and manage the Biodiversity Park, along with the supporting field staff for creating awareness on issues related to biodiversity conservation.

As the Biodiversity Park is a part of the UFTA, the employees or the infrastructure are primarily for use in programmes designed, planned and implemented by UFTA, and based on their own priorities. Till the time workload related to VVK is low, the UFTA is able to accommodate extra responsibilities related to the VVK without much problem.

Technology Assessment, Dissemination and Training Activities: Records and details for activities taken up through VVK after 2012 were not available to the study team. Up to 2012, a total of eight (08) training programmes were organized on different topics and 180 persons were provided training as indicated in following Table 4:

Table-4: Details of Training Programmes by VVK, Haldwani

Financial Year	No. of Training	Topic	No. Of Trainees
2008 – 09	2	Forestry Research & its utilization	25
		Propagation, utilization & protection of Bamboos	20
2009 -10	2	Importance, utilization & protection of NTFP species	22
		Nursery & Plantation Techniques	24
2010 – 11	3	Collection, Storage & Protection of Seeds	28
		Clonal Techniques	28
		Agro-forestry, scope for livelihood	20
2011-12	1	Herbal plant growing	16
Total	**8**		**183**

Source: Based on data provided by Extension Division, FRI, Dehradun

According to the staff working for the Biodiversity Park, between 700 to 800 farmers have been trained on agro-forestry and more than 500 school students participated in awareness programmes on biodiversity conservation between 2013 and 2018. However, almost all of these were under programmes unrelated to VVK. As per records shared by FRI, only two 3-day training programmes have been organized by the VVK in the last three years. The following table provides details of the support provided by FRI to VVK Haldwani during the past three years (2017-18 to 2019-20).

Table-5: Support provided by FRI to VVK, Haldwani in last 3 years

Activity	2017-18	2018-19	2019-20
Literature, printing brochures, newsletter	Yes (1 title, 35 copies)	No	Yes (1 title, 46 copies)
Training & Capacity Building	1 (3 day, 35 participants)	No	1 (3 day, 46 participants)
Model Nursery establishment & maintenance	No	No	No
Extension Equipment	No	No	No

Source: Based on data provided by Extension Division, FRI, Dehradun

UFTA is one of the main centres for forestry training in Uttarakhand and organizes various short-duration programmes on varied topics related to forestry for different target groups. It is noteworthy that there is not much difference in design, topic, content, method, target group or resource persons employed for the trainings organized by UFTA and the VVK. Therefore, there is no clear significant metric to define VVK's contribution to the learning and dissemination process, other than the provision of some additional funds and literature for distribution.

The Interpretation Centre designs information materials (leaflets, brochures) on different species based on available knowledge from various sources. It is not clear the extent to which these materials have been informed by the outcomes of research at FRI. No new or recent study materials from FRI or other ICFRE institutes have been distributed at the Interpretation Centre. Some published materials from the years 2010 and 2011, supplied by ICFRE are still in storage lying unutilized.

Fund Requirement and Fund Flow: Apart from the initial phase of VVK establishment when a relatively higher amount of funds was allocated, funding for the VVK in subsequent years has been meagre and irregular. The following table provides the budget allocated for extension and VVK activities at FRI, Dehradun between April 2012 and March 2017. The budget amount is for three (03) VVKs under the FRI umbrella, and not only for VVK Haldwani.

Table-6: Budget for Extension and VVK activities at FRI 2012 to 2017

Financial Year	Total Budget for Extension (million INR)	Budget for VVK (million INR)
2012-13	2.04	0.1 (5% of total)
2013-14	0.824	0.05 (6%)
2014-15	0.450	0.05 (11%)
2015-16	0.058	0 (0%)
2016-17	2.85	0.3 (11%)

Source: Self Study Report Submitted to NAAC, FRI Dehradun, 2017

As such, the budget provided for the extension at FRI is quite low considering the extension needs, and the share of the budget for VVK varied from zero (0) to 11% in different years, with the maximum budget allocation at Rs. Three Lakh (Rs. 100000 per VVK in the year 2016-17). Such a meagre amount is not sufficient for taking up extension activities or to maintain the VVK resources/assets such as model nurseries. There is little income from the sale of seedlings, with about 3000 to 5000 seedlings sold from the nursery according to local staff. It is also not clear if the income from sale is utilized for the VVK. Apart from increasing the production and sale of seedlings, there are few options for mobilizing funds under the existing setup other than soliciting an increase in grant from ICFRE, without changing the current institutional set-up.

3.2. VVK, Bikaner (Rajasthan)

Arid Forest Research Institute (AFRI) established VVK, Bikaner in 2009 in collaboration with the Rajasthan Forest Department (RFD). It is one of the three (03) VVKs functioning under AFRI, and is located at a distance of about 250 km from AFRI campus in Jodhpur. RFD earmarked two hectares of land within Beechwal nursery under the IGNP Stage II Forest Division, Bikaner and an existing building on the site for the VVK.

The affairs of the VVK are being managed by an in-charge of the Extension Division of AFRI in collaboration with DCF, IGNP Stage II, Bikaner, who is the Nodal Person on behalf of RFD. It is noteworthy that the Extension Division in AFRI is combined with the Agro-forestry Division. An MoU was signed with State Government during the Eleventh Plan period, which was extended in 2012-13 for another five years i.e., 2017. The current status of the MoU is not clear.

Nursery at VVK, Bikaner

Infrastructure and Human Resource: A hi-tech nursery was established in 2008-09 over the two-hectare area inside Beechwal nursery. The nursery was well maintained till 2013-14. After 2013-14, (except in 2016-17), no nursery maintenance operations were carried out. The building on the site, used for storing literature provided by AFRI, was in dilapidated condition and in need of repair. The nursery and shade house were also in dilapidated condition. Few root trainers can be found and the compost unit was not properly maintained. Both the nursery and the building require proper maintenance and have suffered on account of the non-availability of funds.

There is no dedicated full-time staff for the VVK. The AFRI personnel (Scientist/Chief Technical Officer/Senior Technical Officer) provide their time for VVK activities as and when required, which in any case is not much as few activities were undertaken by VVK. Local staff from RFD is deputed for VVK activities by DCF, IGNP Stage II Bikaner, if requested by the Extension Division, AFRI. There is a lack of clarity regarding who is responsible for providing the regular full-time staff required for VVK activities, particularly nursery operations. While as per the original agreement/guidelines, ICFRE is responsible for the maintenance of the model nursery, no nursery workers were employed by AFRI. To coordinate its activities for the VVK, AFRI depends on the DCF, Bikaner and the local Range Officer under whose jurisdiction area the nursery is located.

For organizing training programmes, VVK, Bikaner depends on the infrastructure, such as training hall, equipment, hostel, etc. of other institutions such as Swami Keshvanand Agriculture University, Bikaner.

Technology Assessment, Dissemination and Training: The VVK has taken up mainly three activities i) Literature distribution for information and awareness creation; ii) Training and capacity building for knowledge and skill development; iii) Model Hi-Tech nursery for demonstration of nursery technologies and raising quality planting material for distribution.

Between three to ten thousand seedlings have been raised annually in the model nursery, with a total of 22000 seedlings till date. Out of these, 18500 seedlings were distributed either to farmers or used by SFD for plantations. As per the Annual Report of AFRI 2012-13, 3000 seedlings of *Prosopis cineraria* and *Dalbergia sissoo* were sold for Rs. 15000 to farmers in the year 2011-12. No records are, however, available on beneficiary farmers and there is no follow-up report on results and outcomes (actual number of seedlings planted, survival rate of seedlings, etc.). It may also be mentioned that the nursery operations have been sporadic and seedlings were raised only in five (05) years out of the last 12 years. No nursery related operations have been taken up by VVK since 2014-15, except in 2016-17, when the maintenance cost was borne by RFD. Details of model nursery activities taken up at the VVK over the years are given in the Table 7.

Table 7: Model Nursery Activities at VVK Bikaner

Year	Model Nursery Activities
2008-09	Establishment of model nursery
2009-10	10000 plants raised and distributed
2010-11	3000 seedlings raised and distributed
2011-12	3000 seedlings raised and distributed
2012-13	No activity
2013-14	3000 seedlings raised and 2500 distributed
2014-15	No activity
2015-16	No activity
2016-17	3000 seedlings raised and used by SFD
2017-18	No activity
2018-19	No activity
2019-20	No activity

Source: Data provided by AFRI and data available in Annual Reports of AFRI

Since its establishment, VVK, Bikaner has organized a total of eight (08) training programmes, wherein a total of 396 farmers (including only four women) and field functionaries of the RFD have been trained on different topics. The focus of the training at the VVK has been on model nursery, agro-forestry species, organic farming and new techniques in forestry and agro-forestry, and the participants include field officials of SFD, farmers/ VFPMC members, specifically from districts covered within Bikaner Forest Circle. The training programmes were generally of two to three days duration, with the focus on both knowledge and skill-building. The table below provides details of training and literature support activities.

Table-8: Literature Distribution and Training at VVK, Bikaner

Year	Literature Distributed		Trainings	
	No. of Titles	No. of Copies	No. of Trainings	No. of Participants
2008-09	Old lit	400	1	42
2009-10	Old lit	200	1	82
2010-11	2	2190	1	41
2011-12	2	3250	1	65
2012-13	Nil			
2013-14	10	260	1	26
2014-15	Nil			
2015-16	Nil			
2016-17	8	40000	2	119
2017-18	0	0	0	0
2018-19	8	360	1	45

Compiled from data provided by AFRI

Fund Requirement and Fund Flow: Availability of funds for VVK activities has been irregular and meagre after the end of the Eleventh Plan period (2013-14). In the last four years, few activities were taken up and the model nursery has degraded due to lack of proper maintenance and upkeep. There are no secured sources of funding other than grants from ICFRE. Although some income was realized from the sale of seedlings to farmers in past years, it is not clear how or when this income, if at all, was used for VVK activities. VVK does not have a separate bank account. In the years when the funds were allocated, the amount has been meagre, varying between Rs. 50000 to Rs 100000, except in the first year when the model nursery was established.

Box 1: Visit to Krishi Vigyan Kendra, Jodhpur

During the visit to AFRI, the study team of NABCONS also visited KVK Jodhpur and interacted with Subject Matter Specialist (SMS), Plant Protection. It was established in 1983 by the ICAR under the administrative control of Central Arid Zone Research Institute (CAZRI), Jodhpur. Since its inception, it has been working for uplifting the socio-economic condition of the farming community of the district through scientific interventions in the agricultural and allied sectors. A Sr. Scientist heads KVK, supported with 5 SMSs and 5 technical staff and 2 technicians cum driver.

The KVK undertakes short and long duration vocational training for farmers, farm women and rural youths conducts On-Farm Trials (OFTs) for assessment of technology and Front-Line Demonstrations (FLDs) to establish production potential of the latest technologies in the field of agriculture and allied sectors. The KVK has a dairy as a demonstration cum experimental unit with 96 Tharparkar cattle. It also has 0.85 ha of the area under Orchard demonstration, with orchards of Ber, Pomegranate, Aonla and Gunda. The nursery at KVK produces quality seedlings of various fruit trees and ornamental plants. Trainees learn the propagation techniques of horticultural and forestry species through practical training. The nursery operations and dairy demo unit are managed through Revolving Fund.

The KVK has the well-developed physical infrastructure, including an administrative building, a well-furnished training hall with audio-visual aids and seating arrangement for 40 trainees, a laboratory and a well-furnished computer cell connected with broadband internet. The KVK also has a well-furnished farmers' hostel that can accommodate 24 farmers at a time. The hostel is equipped with solar lights.

3.3. VVK, Agartala (Tripura)

The Rain Forest Research Institute (RFRI), in collaboration with the Tripura Forest Department (TFD), established VVK, Agartala in the year 2008. It is one of the six (06) VVKs established by RFRI. The VVK activities are currently managed by Forest Research Centre for Livelihood Extension (FRCLE, earlier known as Centre for Livelihood Extension or CFLE), that came into existence in the year 2012 and is a unit of RFRI. The mandate of FRCLE is to build the capacity of forest-dependent communities in forest-based livelihoods and disseminate available technologies/processes/tools to user groups. FRCLE also undertakes research on bamboo propagation, preservation and value-addition.

Infrastructure and Human Resource: The VVK is located in the premises of the FRCLE and has access to all resources that FRCLE has at its disposal. A model nursery has been established at Hatipara, at a distance of about two (02) km from the FRCLE building, with a capacity of raising about 50000 seedlings at a time. Seedlings of around 20 different species are normally raised in the nursery. However, in the absence of any funding for the activity under VVK, the nursery is being maintained through support from other projects of FRCLE and TFD. The FRCLE also has plantations of Agar, Bamboo and Broom Grass for research and field demonstration purposes. The Nodal officer reports to the Coordinator, VVK in the Extension Division at RFRI. The Nodal officer and the Forest Guard work fulltime for FRCLE and manage VVK activities. For training, resource persons from other institutions are also invited.

FRCLE is equipped with various training and extension equipment procured with funds from sources other than VVK, but available for the VVK. FRCLE has a dedicated cell for providing information assistance; a Facebook page- regularly updated; and a facility for virtual interaction through Zoom platform. It has ready-made modules and materials including audio-visual for training on five (05) prime topics.

VVK, Agartala

FRCLE has collaborated with Plantation Corporation (TFDPC), NTFP Centre of excellence, Tripura Bamboo Mission, Directorate of Skill Development etc., as well as NGOs such as Don Bosco Vocational Training Institute, Bishramganj, Jana Unnayan Samiti Tripura, BENU, Tripura Bamboo and Cane Development Centre, Foundation for MSME and many other institutions apart from TFD for leveraging their resources for conducting various training programmes.

Technology Assessment, Dissemination and Training: The focus of extension at FRCLE has been on the popularization of low-cost bamboo treatment in rural areas of Tripura, low-cost vermicomposting techniques, promotion of bamboo nurseries and development of herbal gardens. Around 3000 farmers, women and youth, as well as local *vaids* (tribal medics), have been trained by the VVK over the years (2009 to 2018), out of which 65% are women.

Demo on Bamboo products in VVK, Agartala

Box 2: Success Markers and Outcomes Achieved by FRCLE and VVK, Agartala

Innovative community-level initiatives for livelihoods strengthening: FRCLE has also involved 55 local *vaids* in the form of the Vaidyaraj Herbal Growers Society and supported them to establish ten (10) herbal gardens in the North Tripura district. The Society plans to create a knowledge bank on 500 medicinal plants. FRCLE has launched a "Product development for livelihood promotion under VVK" programme under which, training for various types of bamboo handicrafts and utility products made of broom grass, etc. are organized.

Training based on the understanding of market needs: FRCLE has also promoted bamboo nurseries in Tripura to meet the growing demand for bamboo planting materials. About 200 youths and farmers were directly engaged in the production of bamboo seedlings with support from FRCLE. They were provided training and planting materials for the development of Quality Planting Material (QPM) of bamboo for raising nurseries. Rural youth and farmers are reported to have supplemented their income by supplying quality bamboo plants to various agencies such as TFDPC and Tripura Rehabilitation Plantation Corporation (TRPC) for bamboo plantations.

Support for market linkage and collective marketing: FRCLE has helped develop market linkages for vermicompost produced by the beneficiaries (trained by VVK) in West Tripura and North Tripura districts for encouraging, skilling and supporting local youth to install large-scale vermi-compost units. The vermicompost producers have also been organized in producer groups and the vermicompost is marketed under the brand name 'FASAL' through MAS Agrochemicals, Agartala.

FRCLE organizes about four to five interactive sessions with various stakeholders every year and nearly 15 to 20 training programmes in a year by inviting experts from various fields. Also, 04-05 awareness programmes and 10-12 exhibitions are being organised annually. Details of various training programmes organized by VVK Agartala are provided in Table 9.

Table-9: Training Programmes Organised by VVK Agartala

Year	Training Topic	Details	
		As per FRCLE	*As per Records at Media & Extension Div.*
2009-10	Bamboo-based livelihood opportunities	2 days	04 trainings; 08 days; 80 participants
	Agroforestry for marginal land	2 days	
	NTFP and value addition	2 days	
	Plantation & value addition of medicinal plants	2 days	
2011-12	Training on forestry for JFMC members	9 batches; 3 days	04 trainings; 20 days; 80 participants
2012-13	Livelihood through SFM; Cultivation & Harvesting of Citronella & Lemon Grass; Vermi-composting; Seed collection & treatment; Vegetative propagation of bamboo	3 days; 37 participants	3 days; 37 participants
2015-16	Documentation & Assessment of Traditional Health Knowledge in Tripura	3 days; 40 participants	3 days; 40 participants
2017-18	Value addition in Broom Grass for enhanced income	2 days; 20 participants	2 days; 20 participants
	Designing & establishing herbal Home gardens for traditional health care	2 days; 20 participants	2 days; 20 participants
2019-20	Entrepreneur Development Training on Beekeeping		02 trainings; 4 days; 40 participants
	Bamboo Shoot Processing		

FRCLE has also developed literature in the form of manuals and leaflets on various topics related to bamboo cultivation and management. Pamphlets on various species such as Hollong, Gamhari, Agar tree, Sarpgandha, Acacia mangium, Rattan nursery plantation techniques, etc. have also been developed.

The VVK has managed to undertake several activities despite limited resources, as it has been able to mobilize resources from TFD and various government programmes/projects (e.g. JICA-funded forestry project) and link their extension efforts with their ongoing research programmes. The TFD also regularly engages resources of VVK and FRCLE to organize various programmes. However, it needs to be underlined that not all the programmes and activities by FRCLE can be credited to the VVK. A number of similar trainings and skill development programmes are organized by FRCLE outside the VVK platform. Irrespective of this, it is noteworthy that the Centre has managed to build up a profile for itself, and to some extent for the VVK, through its various initiatives related to bamboo and rattan handicraft.

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Fund Requirement and Fund Flow: VVK Agartala, on average, has an annual budget of Rs. 100000 for its activities. This is only sufficient to take up two (02) short duration trainings with about 50 to 60 participants. The VVK has been able to mobilize additional resources and organize more training programmes by linking up with other agencies and programmes. Also, the nursery operations are maintained with support from TFD and other programmes, as currently no funds are allotted by ICFRE for maintenance of nurseries. It is, however, noteworthy that in 2019-20, out of Rs. 100000 allotted to the VVK, only Rs. 80000 was spent. Therefore, the funding was not observed insufficient. However, there is a need to explore the possibility of FRCLE generating its own funds.

3.4. VVK, Coimbatore (Tamil Nadu)

The Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore established VVK Coimbatore in collaboration with the Tamil Nadu Forest Department (TNFD) in 2009. It is situated within the forest campus of IFGTB, which also hosts the office of APCCF, Coimbatore Circle; DFO, Coimbatore and Forest Extension office of Tamil Nadu Forest Department. The VVK operates within IFGTB premises with facilities like Tree Information Centre and Nurseries at Forest Campus, Coimbatore. It is one of the three VVKs currently functioning under IFGTB.

Tree Information Centre at VVK, Coimbatore

Infrastructure and Human Resource: IFGTB is very well equipped with various resources that are used for its outreach and extension programmes. Though the status of a separate model nursery at Forest Campus for VVK is not clear, IFGTB has its own model nursery with an annual production capacity of 5 lakh planting stock. The nursery is equipped with modern vegetative propagation structures viz., Green House, Shade House, Mist Chamber as well as low-cost poly tunnels and captive clone banks of *Azadirachta indica, Tamarindus indica, Casuarina equisetifolia* and *Emblica officinalis*.

Another resource of IFGTB, which is deemed for the use of VVK is the Tree Information Centre (TIC). The TIC displays information on the package of practices of important tree species, plantation technologies, advancements made in Genetics and Tree breeding, Biotechnology, Biofertilizers and Bio-manures, seed handling techniques, etc. Other training resources of IFGTB and Forest College are also accessible to the VVK, including resource persons and experts, as and when required.

The VVK also has access to computers, LCD projectors, camera, video-conferencing facility, etc., to conduct various outreach activities and documentation. Other than this, other resources of IFGTB such as IFGTB-ENVIS and various mobile applications developed by IFGTB also serve the goal of VVK.

The VVK functions within the jurisdiction of Head, Extension, IFGTB. A Nodal Officer has been assigned to co-ordinate with TNFD. An Assistant Chief Technical Officer and Technical Staff of Extension Division of IFGTB carry out the field and office work of VVK with support from local DFO, ACF Extension and staff of Extension Division of TNFD. The VVK does not have dedicated human resources and the personnel at IFGTB as well as TNFD take up additional responsibilities for VVK related operations.

Technology Assessment, Dissemination and Training: The Extension Division of IFGTB manages the VVK activities including establishment/ maintenance of model nursery; demo plantations; distribution of quality planting stocks and seeds; demonstration of agroforestry models and precision silviculture practices; capacity building on nursery management, propagation and planting techniques, bio-fertilizers, seed collection, handling and storage techniques, cultivation of medicinal plants, integrated pest and disease management, manufacturing of vermicompost, etc.; transfer of technologies; organising trainings, seminars, workshops and publications.

IFGTB has been involved in the breeding programme of fast-growing and commercially important tree species and has developed improved quality planting materials of *Casuarina, Eucalyptus, Teak, Acacias*, etc. Its extension efforts and initiatives - VVK platform, Demo village, training and seminars and Tree Growers Mela (TGM) and TIC - are focused on these.

The VVK distributes quality planting stocks to farmers and provides information on various species, different agroforestry models, plantation technologies, bio-manures and bio-fertilizers through pamphlets, brochures and information booklets for largescale adoption. Farmers, frontline staff of Forest Department, Forest Extension Officers etc., are trained on cultivation and management of important tree species used in the "Tree Cultivation in Private Land" programme, quality planting stock production and bio-fertilizers and bio-manures, clonal technology, etc.

Tree Growers Mela (TGM) is a flagship programme of IFGTB, organized annually at different locations within Tamil Nadu to spread awareness on tree cultivation using improved planting materials including clones. Since 2009, IFGTB has organised 11 TGMs, wherein more than 8500 farmers have participated. At times, the TGM has been funded through VVK Normal (Plan Head), such as 'Industrial Tree.

Growers Mela', organised in December 2019, in collaboration with Tamil Nadu Newsprint and Paper Limited (TNPL) at Karur with the theme of "Clonal Farm Forestry for Increased Productivity'.

The Institute has also developed internet-based technologies, which include three (03) mobile applications, webinar sessions and social media content posted on YouTube channels etc., to improve its outreach and extension efforts. The VVK conducts regular training programmes for farmers, forest officials and others as mentioned in the following Table 10.

Table-10: Training Programmes Organized by VVK, Coimbatore

Year	Topic	Participants
2009	Tree Cultivation and Protection of Plant varieties	150 farmers and 30 Forest Extension Officers
2010	Seed production and nursery techniques	200 farmers from various Districts of Tamil Nadu
2010	Training programmes on Clonal Forestry	Officials of TNFD
2011	Skill Upgradation on Nursery and Plantation Techniques of Fast-Growing Tree Species	65 Staff of Department of Forests and Wildlife, Puducherry.
2011	Plantation Technologies	50 Foresters
2013	Workshop on Tree Cultivation Technologies for transfer of technologies to Krishi Vigyan Kendras (KVKs)	Scientists, SMS & Technical staff from various KVKs
2019	Popularization of windbreak clones	62 banana farmers
2019	Advances in plantation technology for productivity enhancement	31 field officials of Tamil Nadu Plantation Corporation Limited

Source: Compiled from data provided by IFGTB

IFGTB is well networked with private corporations (TNPL, Sharon Plywood Limited, Sheshashayee Paper Board, etc.), NGOs and various Government agencies. It is well-positioned to leverage these linkages for purpose of achieving the goal of VVK. It also collaborates with KVKs and there are regular interactions between the scientists working at the two institutions.

IFGTB can claim many success stories to its credit as a result of its well-organized and comprehensive extension and outreach efforts in respect of tree cultivation on private farmland. However, most of these could be attributed to initiatives of IFGTB, where VVK's contribution has been marginal at best.

Fund Requirement and Fund Flow: Most of the extension and capacity-building initiatives undertaken by IFGTB are supported by funds from other sources and not the VVK platform. Fund availability for VVK has been meagre and irregular, as in the case of other VVKs. The funds allocated to the VVK are insufficient to strengthen the VVK by equipping it with staff and infrastructure or even to take up extension programmes in any meaningful manner.

3.5. VVK, Jagatsukh, Manali (Himachal Pradesh)

VVK in Himachal Pradesh was established by the Himalayan Forest Research Institute (HFRI), Shimla in collaboration with Himachal Pradesh Forest Department (HPFD) in the year 2008 first at Forest Training Institute, Sunder Nagar in Mandi district. In 2013, it was relocated to Field Research Station (FRS) of HFRI at Jagatsukh, Manali after the MoU with HPFD expired in 2012. The VVK is located approximately at a distance of about 230 km from the HFRI campus at Shimla. It is one of the three VVKs established under HFRI, the other two being located in Jammu and Ladakh. All the VVKs were established with the mandate to disseminate technologies developed by HFRI to various stakeholders.

VVK, Jagatsukh, Manali

Infrastructure and Human Resource: The VVK is located within the campus of FRS of HFRI at Jagatsukh, Manali. The FRS is spread over more than five (05) hectares of area, out of which three (03) hectares are allocated for the nursery while plantations cover two (02) hectares. The campus also has a small two-storey building used as office cum storage. In the area allocated for the nursery, a model traditional nursery is existing. Seedlings of more than 30 different species are reportedly grown in the nursery. There is no training hall or audio-visual equipment available with FRS.

The VVK has, over the years, developed training modules and materials on ten different topics including nursery practices, tree protection against pest and disease, planting techniques, agro-forestry, soil and water conservation, etc.

The FRS has three (03) full-time employees to take care of VVK activities. They include Forester, Forest Guard and multi-utility staff. It is estimated that during 2019-20, the staff provided about 15 days of their time for the purpose of the VVK activities. For training purposes, the VVK depends on resource persons from other institutions, including HFRI and SFD.

Technology Assessment, Dissemination and Training: VVK Manali organizes training on various topics including medicinal plants, non-wood forest produce and agro-forestry, etc. for villagers (farmers, rural women), field staff of SFD and local NGOs. On average, one or two programmes are annually sponsored through the VVK. The programmes are mostly in the nature of awareness generation and information sharing. Details of the various programmes organised by the VVK are provided in the Table 11.

Table-11: Training Programmes Organized by VVK, Jagatsukh, Manali

Date (Duration)	Title of Training	Participants
July 2008 (1 day)	Forestry interventions for Eco-restoration of Degraded Areas though MPTs	71 Farmers & Field Functionaries of Joginder Nagar & Mandi districts
Aug. 2008 (1 day)	Intercropping of Medicinal Plants: Some innovation and options for diversification	44 Farmers & members of Mahila Mandals of Kullu district
Dec, 2008 (1 day)	Commercial Cultivation of Medicinal Plants: An Option for Augmenting Rural Income	52 farmers from Shimla District
2008 (1 day)	Tree improvement: A Tool for Productivity Enhancement	40 farmers from Solan district
Feb 2009 (1 day)	Integrated Pest Management in Nursery of Medicinal Plants	30 officials of SFD and progressive farmers of Palampur
March 2009 (1 day)	Need of Forestry Research and Diagnostic Studies for Rural Development.	25 officers from HPFD at HFRI, Shimla
May 2009 (2 days)	Inter-Cultivation of Medicinal Plants for Sustainable Livelihood.	50 Field staff of SFD, Farmers & Mahila Mandal members from Kullu district
Feb 2011 (1 day)	Restoration of Degraded Areas through Forestry Intervention	60 participants; at KVK, Saru, Chamba H.P
Feb 2011 (1 day)	Cultivation of Temperate Medicinal Plants: An Option for Diversification and Augmentation of Rural Income.	40 HPFD staff, Progressive Farmers, Members of Mahila Mandals, Yuvak Mandals and NGOs of Kullu district
June 2011 (1 day)	Issues and Concerns in Forestry: Awareness generation amongst school children.	100 teachers, local residents and school children; officers & scientists; organized at HFRI, Shimla.
June 2011 (1 day)	Workshop cum Training on Modern Trends in Production of Quality Planting Stock	42 participants from HPFD; organized at HFRI, Shimla.
March 2012 (1 day)	Sustainable Utilization, Conservation and Cultivation of Medicinal Plants	50 field staff of HPFD and local farmers
Nov 2013 (2 days)	Conservation, Utilization and Cultivation of Medicinal Plants.	40 field staff of HPFD and progressive farmers at KVK Chamba
July 2013 (1 day)	Training programme on Networking of VVKs with KVKs.	Not applicable
Oct 2016 (1 day)	Sustainable Development through Agroforestry	33 farmers and horticulturists of Kullu district

Source: Compiled from data provided by HFRI

Details of trainings organized through VVK after 2016 are not available to the study team. The major characteristics of training programmes organized are:

- Prior to 2013, many trainings were organized at Shimla as well as in different districts making use of the infrastructure and facilities of HFRI, HPFD and KVKs. Since 2013, the training has been limited to participants from Kullu district
- The target group for training mostly includes HPFD officials, (progressive) farmers, rural women and youth and NGOs.
- Most numbers of trainings are on medicinal plants

- Most of the trainings are one-day events focused on awareness-generation and information/knowledge sharing, rather than skill-building
- Most of the time, the lecture is the main medium of training
- Similar training on similar topics and for similar target groups are also organised through other platforms of HFRI.

The following activities are also reported by the VVK:

- Display and distribution of brochures, pamphlets, booklets, posters, etc.
- Exposure visit of farmers and other stakeholders
- Establishment of the demo nursery. The status of model nursery developed with ICFRE investment in Sundernagar is though not clear.
- Raising quality planting material of various agroforestry and medicinal plant species.

The nursery and demo plantations at the FRS in the campus were also available for VVK, as and when required. The nursery is well maintained with regular operations at the FRS. No separate technology assessment with regards to nursery practices are undertaken through the VVK at the Manali campus and nursery operations are guided by the needs of the FRS, though the priorities of VVK and FRS do overlap in many respects.

3.6. VVK, Jabalpur (Madhya Pradesh)

VVK, Jabalpur (M.P.) was established under the aegis of the Tropical Forest Research Institute (TFRI), Jabalpur. It is one of the four VVKs established by TFRI. The other three VVKs are located at Koraput, Odisha; Raipur, Chhattisgarh; and Jalna, Maharashtra. The VVK, Jabalpur is located at Sehari Forest Nursery in the campus of State Forest Research Institute, under the management of Research & Extension Circle, Jabalpur.

Infrastructure and Human Resource:

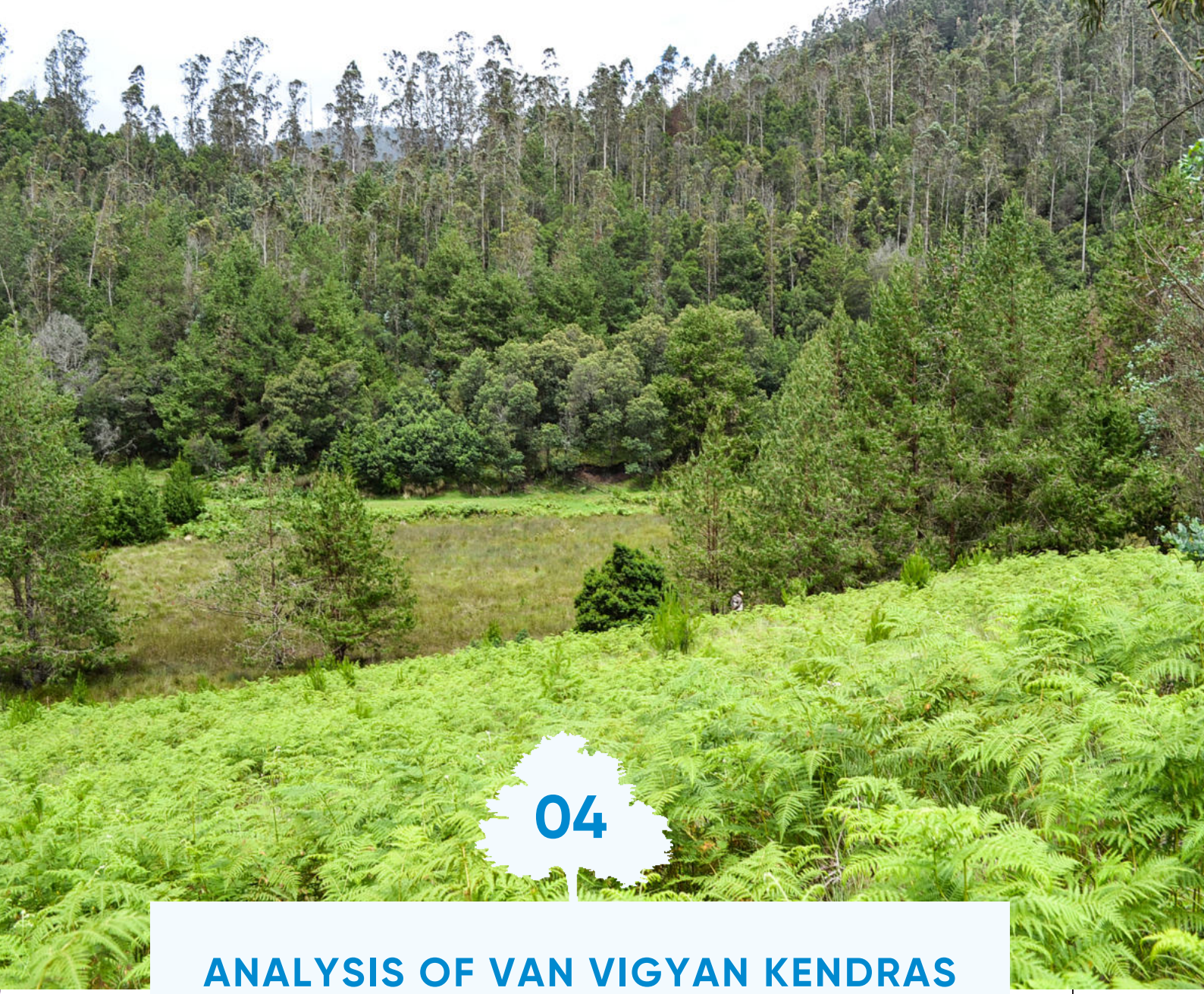
Although the model nursery was developed under the VVK programme, presently the identity of the VVK model nursery has been entwined with the Sehari nursery managed by the Research and Extension wing of the MPFD. It is understood that the VVK has access to the nursery for the purpose of assessment and demonstration of any nursery-related technology if required. The VVK does not have any employee working for it. Human resources available with the Research and Extension Division of MPFD and the TFRI are engaged for VVK activities, as and when required.

Technology Assessment, Dissemination and Training: As per the information available, few programmes were undertaken by the VVK between 2015 and 2020. Details on how the model nursery is utilized for demonstration purposes or production of technological material were not available. The details of various training organized by the VVK are provided in the Table 12.

Table-12: Details of Training Organized by VVK, Jabalpur, 2014-15 to 2019-20

Year	Topic	Duration (Day)	No. of Participants
2014	Integrated management of insects and diseases in planting material	1	83
2014	Suitable agro-forestry models for Central India region and their management	1	90
2014	Nursery techniques for production of Quality Planting material; seed collection & storage	1	81
2014	Strengthening network for the outreach of research findings of ICFRE and its Institute	1	125
2014	Strengthening network for the outreach of research findings of ICFRE and its Institute	1	150
2020	Integrated management of pest and disease and Advanced nursery techniques	2	180*

*Source: Based on data provided by TFRI, Jabalpur; * as per record of Media & Extension Div.*



04

ANALYSIS OF VAN VIGYAN KENDRAS AND KRISHI VIGYAN KENDRA SYSTEM

This chapter presents the analysis of various aspects of VVKs status and functioning along with the discussion on various aspects and issues of the VVK system, which potentially influence its performance and effectiveness. A comparison with KVK system is presented to understand where the VVKs stand in reference to a longstanding and robust FLE arrangement.

4.1. Objectives and Role of VVKs

VVKs were conceptualized as a platform for FLE and capacity building for potential users of the technologies and practices, emerging from research by ICFRE and SFDs. The potential target groups identified as farmers for tree cultivation or agro-forestry, forest-dependent communities, JFMCs, Social Forestry Committees, Tree Grower Cooperatives, NTFP Producer groups, SHGs engaged in forestry enterprises, NGOs, forest-based industries, and extension workers. The overall aim is to effectively disseminate various technologies and practices developed by the RRIs and SFDs to these target groups. Table 13 presents the focus and target groups of the VVK activities.

Table-13: Focus Area and Target Group for Extension and Training by VVKs

RRI/ Centre	VVK	Training Topics	Target Group(s)
FRI, Dehradun	VVK, Haldwani	Bamboo propagation and utilization; Nursery techniques; Planting Techniques; Seed collection and storage; Clonal techniques; Agro-forestry; Medicinal plants	SFD field staff, Van Panchayat members, Farmers, NGOs, students
HFRI, Shimla	VVK, Jagatsukh, Manali	MPTs for degraded areas; Medicinal plants intercropping, cultivation, utilization, conservation; Integrated pest management in MAP nursery; QPM; Tree improvement	Farmers & Horticulturists, Mahila mandal & Yuvak mandal members, Field staff of HPFD, NGOs
AFRI, Jodhpur	VVK, Bikaner	Agroforestry species for arid & semi-arid region; Nursery techniques; Organic farming	SFD field staff, Farmers, VFPMC members mostly from Bikaner Circle
TFRI, Jabalpur	VVK, Jabalpur	Agroforestry models; Integrated pest and disease management; QPM production; Seed collection & storage	Officers & field staff of SFD, Farmers, KVK Scientists & SMS
RFRI, Jorhat / FRCLE, Agartala	VVK, Agartala	Bamboo nursery, propagation, handicrafts; Value addition for NTFPs, MAPs, Broom Grass; Beekeeping; Cultivation & harvesting of Citronella & Lemon grass; Agroforestry for marginal land; Herbal home garden; Vermicomposting; Seed collection & treatment; JFM	JFMC members, SHG women, Rural youth, Bamboo artisans, Farmers, local *vaids,* Field staff of TFD, NGOs
IFGTB, Coimbatore	VVK, Coimbatore	Tree cultivation (Plantation technique, protection, clonal plantation, fast-growing spp., enhancing the productivity of plantations) Seed production; Nursery techniques;	Farmers & Tree Growers, TNFD officers, Foresters & Extension Staff, Scientists & SMS from KVKs, Field officers of TNPL

Source: Compiled from ICFRE Annual Reports & Data provided by RRIs

The focus of the VVKs seems to be very much on strengthening the livelihood of rural communities through improved returns from various types of forestry activities and the adoption of improved techniques and practices.

However, most of the programmes are of one or two days duration. In the longer duration programmes, as found in VVK, Agartala, multiple topics were included. It is, therefore, reasonable to conclude that the purpose of the programmes was more to develop awareness or knowledge than skill-building.

Table-14: Issues and Challenges regarding objectives and role of VVKs

- Lack of strategic vision, framework and action plan regarding VVK at the national, state or VVK level. Vision, mission, mandate and target group for VVKs are not clearly articulated.
- Activities for front-line extension and capacity building are organized under separate schemes such as VVK, DV, OFT, etc., not necessarily complementing each other and without a coherent synergy.

4.2. Significance and Relevance of VVKs

The significance of strengthening FLE targeting farmers and forest dependent communities cannot be overestimated. Improving the income of farmers through tree-farming; making farming more climate-resilient through agroforestry; increasing the tree cover areas, including private

land; strengthening the livelihood of forest-fringe communities through the NTFP value chain and its sustainable harvesting; sustainable management of forest resources under JFM or CFM; reducing wood consumption etc. are priorities in the policy, programme and investment framework of the government. VVK as a robust institutional platform for FLE and Capacity Building for technologies and best practices developed by RRIs and other institutions can contribute significantly to these priorities.

The significance of a programme/scheme or institutions, in the local context, however, depends on the need/demand of the goods or services provided by them and availability of similar goods/ services from other sources.

This section analyses the significance of the VVKs vis-a-vis their mandate/ activities, location/coverage, target group and value they create in terms of new knowledge, skill-building, adoption of new technologies/practices and the networks/linkages they could establish with other relevant institutions.

4.2.1. Mandated Activities of VVKs

The mandate for the VVKs was defined by the activities that were supported under the programme, which included:

1. Establish and maintain model nursery and conduct trials on land allocated to VVK
2. Organize training and capacity building programmes (the original target of organizing two 2-week training on agroforestry techniques to 40 persons, including farmers; revised to 200 participants in 2014).
3. Provide literature in the form of brochures, pamphlets, newsletters, etc.
4. Organize other extension activities

Different activities related to FLE and capacity building undertaken by the VVKs are indicated in the Table 15.

Table-15: Details of Extension and Capacity Building Activities by VVKs

Activities	VVK, Agartala	VVK, Bikaner	VVK, Coimbatore	VVK, Jagatsukh, Manali	VVK, Jabalpur	VVK, Haldwani
Technology Assessment & Demonstration	Nursery techniques for Bamboo	Hi-tech Nursery techniques	Various at IFGTB	Nursery activities	Compost unit	DNA
Production & Distribution of technological products	Bamboo planting material	Quality seedlings of local spp	Clonal Seedlings	Quality Seedlings	DNA	DNA
No. of training programmes per year	2	1-2	3	1	3	2
No. of persons trained per year	50 to 60	30 to 40	250	50	30	35
No. of awareness events per year	3	0	3	1	2	2
Advisory and technical support	Yes, by FRCLE	No	Yes, by IFGTB	Yes, by HFRI	DNA	DNA
Activities of in FY 2019-20	2 Training	DNA	Industrial TGM; Farmers mela & Training with KVK	Nursery of different forestry and medicinal plant spp.	DNA	DNA
No of persons trained in FY 2019-20	2 SFD staff; 40 Farmers; 18 women	DNA	30 SFD Staff, 100 Farmers	25	DNA	DNA

Source: Compiled by Study Team based on data collected from RRIs

VVKs, located in the proximity of the concerned RRIs, had relatively easy access to the resources of the RRI. Some of the VVKs (Tripura and Coimbatore) managed to leverage funds and other sources as well to advance their mandate more effectively. RRIs, such as IFGTB, have developed IT and mobile applications for use of tree growers, which adds to VVK's capacity-building initiatives. In most cases, it is found that the RRIs as well as some other institutions, also undertake a similar type of training with a similar focus that targets similar groups. Demo Village (DV) is another scheme for the FLE. However, there is not much evidence of strategic linkage and synergy between VVK and DV. Geographical distance and separate implementation arrangements (RRI in case of DV and SFD in case of VVK) perhaps constrained a more comprehensive effort combining the two. Bringing activities related to FLE and capacity building that target farmers and forest-dependent communities, particularly rural women and youth under one umbrella could provide coherence to the extension strategy, improve its significance as well as lead to better results.

4.2.2. Location and Geographical Coverage of VVKs

The need/demand for products/services is also dependent on its availability from other sources in the area. However, if the service is unique like the techniques or best practices borne out of research by the RRIs, the geographical considerations become irrelevant. Even if no operational area was formally defined for the VVKs, it was assumed to be the state as there is only one VVK in each state. Most of them indeed operated at the state-level, except for VVK Jabalpur and VVK Bikaner whose activities were mostly confined to the Forest Circle in which they were located. The selection of the site for locating the VVKs seems to have been influenced more by available land and other facilities (building etc.) than any systematic assessment of the scope for agroforestry or other forestry activities in the area. Table 16 provides the characteristics of the VVK location site.

Table-16: Details of VVK Location Site

VVK Name (District)	Location of land and building	Main activities of Host agency	Geographical Coverage by VVK
VVK, Agartala	Central Social Forestry Nursery, Hatipara	Seedling production & distribution; research; extension	Whole State
VVK, Bikaner	Beechwal Nursery	Seedling production	Bikaner Forest Circle
VVK, Coimbatore	Tree Information Centre, Forest Campus, IFGTB	Research and training	Whole State
VVK, Jagatsukh, Manali	FTI&FC, HPFD/FRS, HFRI	Training/Research	Whole State
VVK, Jabalpur	Sehari Nursery, SFRI	Seedling production and distribution; Research	Research & Extension Circle, Jabalpur
VVK, Haldwani	UFTA	Training	Whole State

Source: Compiled by Study Team based on data collected from RRIs

Most of the VVKs are located in urban or peri-urban districts, located at sites easily accessible and nested within units with similar mandates.

Operating at the state level, the VVK has to 'compete' with various other institutions providing training on forestry and allied sectors. The availability of such options, though, varies across different states – more in a state like Tamil Nadu, and few in Tripura. Most of the SFDs, other state departments, Forestry Training Institutions, KVKs, NGOs working on forestry and allied sectors provide similar services, though not necessarily incorporating the research or technologies or practices developed by the RRIs.

Despite the state-level coverage by many of the VVKs, it is reasonable to assume that the access to its services for people residing within or neighbouring districts is better. The selection of the district for locating the VVK should, therefore, consider the potential for use of technologies such as agroforestry. In order to improve its relevance, the VVKs need to market its (package of) services as unique, better in quality and closely aligned to the needs of its target group. They need to build an identity for themselves as a provider for quality training, relevant information, and technologies related to forestry and allied sectors.

4.2.3. Learning Resources with VVK

The relevance of the resources to the needs of the area, its quality, etc. also determines if the stakeholders would be interested in availing the services of VVKs. Under the VVK programme, ICFRE helped develop three main types of learning resources – model nursery; literature on different topics and training modules/materials on different subjects. Apart from this, the VVKs also have access to the learning resources developed by RRIs or their host institution. Such resources, like demo plantations or demonstration units, are more readily accessible in cases where the VVKs are either nested within the RRI (IFGTB, HFRI, FRCLE) or are located in the proximity (TFRI).

Table-17: Status of Learning Resources with VVKs

Learning Resources	VVK, Agartala	VVK, Bikaner	VVK, Coimbatore	VVK, Jagatsukh, Manali	VVK, Jabalpur	VVK, Haldwani
Model Nursery	Shared with SFD nursery	Hi-tech nursery (defunct)	Hi-tech & other nurseries available for VVK	Shared with FRS nursery; available for VVK	SFD nursery available for VVK purposes if required	UFTA nursery; available for VVK purposes if required
Demo plantations & trial plots; Demo Units	Developed by FRCLE; used for VVK purposes	One demo plantation at Beechwal nursery	Several; Could be available to VVK if required	Developed by HFRI, used for VVK purposes	Compost unit under VVK prog.; Several other with TFRI and SFRI; Could be available for VVK purposes if required	Demo plantations exist with Biodiversity Farm

Source: Compiled by Study Team

The VVKs primarily depend on the human resources of the RRIs and SFD for conducting training since they do not have in-house, full-time and trained human resources. The RRIs report that they have developed training modules/materials on different topics which are available for use by the VVKs. Table 18 provides details of the availability of training and literature for distribution material on different topics.

Table-18: Training Module and Literature with VVKs and Parent Institutions

Topic	VVK, Agartala	VVK, Bikaner	VVK, Coimbatore	VVK, Jagatsukh, Manali	VVK, Jabalpur	VVK, Haldwani
Nursery practices and techniques	Yes	Yes	Yes	Yes	Yes	Yes
Clonal seedlings and plantation	No	Yes	Yes	Yes	Yes	Yes
Climate resilient forestry	No	Yes	Yes	Yes	Yes	Yes
Carbon forestry	No	Yes	Yes	Yes	Yes	Yes

Tree protection (pest & disease)	No	Yes	Yes	Yes	Yes	Yes
Soil and Moisture Conservation	Yes	Yes		Yes	Yes	Yes
Plantation techniques	Yes	Yes	Yes	Yes	Yes	Yes
Organic farming	Yes	Yes		Yes	Yes	Yes
Composting/ Vermi-composting	Yes	Yes	Yes	Yes	Yes	Yes
Cultivation of medicinal plants	Yes	Yes	Yes	Yes	Yes	Yes
Forest product processing and utilization (including for NTFPs)	Yes	No	Yes	Yes	Yes	Yes
Sustainable Forest Management	Yes	No	Yes	Yes	Yes	Yes
Forest / Timber Certification		No	Nil	No	Yes	No
Joint Forest Management	Yes	Yes	Yes	No	Yes	No
Agroforestry models	Yes	Yes	Yes	Yes	Yes	No

Source: Compiled by Study Team based on data collected from RRIs

4.2.4. Linkages and Networks

Linkages and networks with other institutions that have a similar or complementary mandate not only help to combine and leverage resources, but they can also create suitable conditions for an organization to implement its mandate more effectively and efficiently, thereby improving its relevance. Therefore, the VVKs need effective working linkages with different kinds of institutions.

By design, the VVKs were established in collaboration with SFDs. It was, therefore, assumed that this linkage would contribute effectively towards their extension efforts covering the whole state. Not all the VVKs were, however, able to benefit from this. Various central and state government schemes focusing on forestry have been implemented in all six states. In five of the six states, at least one large externally aided forestry project was implemented during the past 10 years. However, only two of the VVKs, Coimbatore and Agartala could utilize these opportunities and implement additional training or extension programmes using the VVK platform.

The usefulness of linkage with KVKs is well understood by ICFRE and RRIs. An MoU was signed between ICFRE and ICAR and guidelines have been developed to facilitate such a linkage. Given the focus of VVKs on agroforestry and their limited number - one per state, the district-wise network of KVKs can be very useful for VVKs to efficiently implement their mandate. Programmes like training and workshops were organized by most VVKs, where Scientists and SMS from KVKs participated. There is little evidence, however, of any initiative for FLE with KVKs, except in VVK Coimbatore where farmer's mela and training programme were jointly organized. No funds are budgeted specifically for building or strengthening linkages with KVKs.

One of the constraints could be the framework and the management set-up under which the VVK operates. Being a programme, with no dedicated full-time staff, they are dependent entirely on the RRIs or SFDs to enter into collaboration with any other institution. Secondly, the joint projects with KVKs need to be backed up with regular staff and sufficient funds, which have been major issues for the VVKs.

Table-19: Issues and Challenges Related to Significance/ Relevance of VVKs

• Low awareness about the VVK, even among the SFD officials who are not directly involved with its activities
• In the absence of a defined strategic goal or purpose for extension, sporadic training on discrete multiple topics may not achieve any substantive results
• There is not much difference in nature or type of training programmes organized by VVK and other agencies (SFD, RRI).

- In most cases, the training programmes are only of one or two days duration, focusing more on information sharing or awareness generation rather than skill-building.
- Capacity building is narrowly construed as only training and other aspects of capacity such as institution building, credit or market linkages, etc. are generally ignored
- Few resources for FLE, other than model nurseries are planned or established under the VVK Scheme.
- Nursery activities and resources could not be sustained in many cases due to a lack of funds. Assets created for demonstration and learning with ICFRE investments such as model nurseries diverted or lost.
- Lack of full time and trained staff led to limited interface with the target group, SFDs and KVKs
- Though some VVKs shared technologies and practices with KVKs, there was no follow up to assess the outcome

4.3. Institutional Structure and Management Set-up for VVKs

VVKs were originally conceptualized as a collaborative programme between ICFRE and SFDs and accordingly, they were established based on an MoU between ICFRE and the State Government. The MoUs were for a period of five years and lapsed in 2012. A few have been renewed but most are pending. In this section institutional structure and management set-up for VVKs are discussed, along with the changes in the setup over the years before and after 2012-13.

4.3.1. Management Structure and Regime

According to the original design, ICFRE-RRIs were the parent institution channelling financial, managerial and technical support to the VVKs and SFDs were the host institution implementing the activities of the VVK programme. This arrangement existed in all the sampled VVKs, except in VVK Coimbatore, where the direct control over implementation was retained by the RRI. The following table presents the structure through which the VVKs were originally nested within SFD prior to 2012-13.

Table-20: Structure at SFD linked to VVK

S.No.	VVK	State	Structure at SFD Linked to VVK
1	Sundernagar / Jagatsukh, Manali	Himachal Pradesh	PCCF & HoFF -> APCCF (Research & Training) -> Director FTI & RC, Sundernagar (Nodal Officer)
2	Haldwani	Uttarakhand	PCCF & HoFF -> APCCF (Forest Research, Training & Management) -> CCF & Director, UFTA, Haldwani (Nodal Officer)
3	Bikaner	Rajasthan	PCCF & HoFF -> Regional CCF Bikaner -> DCF IGNP Stage II Division, Bikaner (Nodal Officer)
4	Jabalpur	Madhya Pradesh	PCCF & HoFF -> PCCF (Research, Extension & Lok Vaniki) -> CCF, Research & Extension Circle, Jabalpur (Nodal Officer) -> ACF, Research & Extension Center & Sehari Nursery, Jabalpur
5	Agartala	Tripura	PCCF & HoFF -> CCF, Research & Training (Nodal Officer) -> DCF Research -> Range Officer, Sadar Social Forestry Central Nursery, Hatipara, Agartala
6	Coimbatore	Tamil Nadu	No separate VVK specific or formal MoU based linkage.

Source: Prepared by Study Team

Research, Training and Extension wings within the SFD were the partners of choice for the VVKs. Within these wings, Training Institutes were the preferred option for locating the VVKs since it had the advantage of well-developed physical infrastructure for organizing training and their campus also supported nurseries and plantations. Nurseries managed by the Research Wing were the other preferred locations.

After 2012-13, the MoUs got lapsed for VVK followed by a break in funding for a couple of years, the original arrangement has got modified – on the ground, if not on paper. In most cases, RRIs have become the *de-facto* host for the VVKs. It happened more easily where the VVKs were located in close physical proximity of the RRIs or their field units. The change in the set-up is indicated in the following Table21.

Table-21: Changes in the Partner / Host Institution of Sampled VVKs

VVK	Parent Institution	Original Host Institution	Nodal Person	Current Host Institution	Current Nodal Person
Haldwani	FRI	UFTA, Haldwani under Uttarakhand FD	CCF & Director, UFTA	UFTA	CCF & Director, UFTA
Jagatsukh, Manali	HFRI	FTI & RC, Sundernagar, HPFD	Director, FTI & RC	FRS, Jagatsukh, HFRI	Head, Extension, HFRI
Bikaner	AFRI	IGNP Phase II Forest Division, RFD	DFO, IGNP Phase II	IGNP Phase II Div	DFO, IGNP Phase II
Jabalpur	TFRI	Research & Extension Circle, Jabalpur, MPFD	CCF, Research & Extension Circle, Jabalpur	Extension Div TFRI *(de-facto)*	Scientist, Extension Div, TFRI *(de facto)*
Agartala	RFRI	Research & Training Wing, TFD	CCF, Research & Training	FRCLE	Head, FRCLE
Coimbatore	IFGTB	IFGTB	Scientist, Extension Div, IFGTB	IFGTB	Scientist, Extension Div, IFGTB

Source: Prepared by Study Team based on information from RRIs

The main reason for the change seems to be the lack of interest by the SFD for the VVK given the small scale of the programme due to significantly reduced funding. This could also be one of the reasons why the MoUs were not renewed in time by various state governments. As the funding for VVK and nursery maintenance activities got interrupted/reduced, the building space and land allocated to the VVK for the nursery were either taken back or used for other programmes. As the MoU had lapsed, there was little to prevent this from happening. In some places such as Himachal Pradesh, the VVK was relocated to another district. Currently, five different types of management regimes can be identified for VVKs.

Table-22: Management Set-up for Implementation of VVK Activities

Management Setup Typology	Parent Institution	Managing Institution	Example
Type 1	RRI	Extension Div of RRI	VVK, Coimbatore
Type 2	RRI	FRS or Center of RRI	VVK, Jagatsukh, Manali and VVK, Agartala
Type 3	RRI	SFD (Training Institute)	VVK, Haldwani
Type 4	RRI	SFD (Research & Extension Wing)	VVK, Jabalpur
Type 5	RRI	SFD (Other Wings)	VVK, Bikaner

Source: Prepared by Study Team

Type 2 has evolved out of the need to keep the VVK functional in light of the change in situation post-2013. As discussed later in the chapter, Type 1 and 2 seem to have performed better than Type 3, 4 or 5.

4.3.2. Division of Roles and Responsibilities

An important part of the partnership structure was the division of roles and responsibilities between the ICFRE-RRIs and the SFD. As per guidelines of January 2008, subsequently revised in August 2014, the roles and responsibilities were divided as follows:

Table-23: Division of Roles and Responsibilities Between ICFRE and SFD

ICFRE Responsibilities	SFD Responsibilities
▪ Provide support for literature in the form of brochures, pamphlets, newsletters, etc. on relevant aspects of forestry, technologies and products developed by ICFRE institutes. ▪ Provide support for training/capacity building covering topics related to forestry and allied sectors and forest-based enterprises ▪ Provide support for establishment and maintenance of model nursery for demonstration of nursery practices and supply of quality seedlings ▪ Financial support for training equipment, demonstration, engaging personnel for VVK related tasks, other overhead expenses, etc.	▪ Appointment of Nodal Officers and Close coordination with concerned ICFRE Institute ▪ Providing and sharing of literature ▪ Provide infrastructure including building and fixtures ▪ Provide land for model nursery and trials ▪ Provide electricity and water supply ▪ Provide personnel for VVK activities – part of the expense on personnel to be met from financial assistance by ICFRE

Source: ICFRE Guidelines for VVK 2008 & 2014

Apart from funds, the programme relied on the technical competence of ICFRE institutes for designing and delivery of programs activities, whereas the SFDs were utilized to provide field staff, mobilize beneficiaries and take care of the local logistics. In the absence of a comprehensive guideline, the role played by each party was sometimes hostage to the understanding and relationship between the concerned individuals. There were areas where the responsibilities related to planning and implementation were not very clear such as the role of SFD in planning for VVK, documentation, record keeping, financial management, etc. In reality, the RRIs managed most of the activities, except maintenance operations of the model nurseries, which were managed by SFD at least till funds were available. No management guidelines for the assets and facilities created for VVKs or identified for use by the VVKs are found.

Table-24: Issues and Challenges Related Institutional Structure and Arrangements

- Low 'ownership feeling' and interest in SFD for the programme due to following reasons 1) SFD generally did not appreciate the value being added to its own institutional capacity in terms of new processes and technologies for extension,; 2) Meagre and inconsistent funding; 3) SFD did not have any effective control over the funds allocated for the programme; 4) Most of the SFDs are short-staffed, particularly their research, training and extension wings, which are poorly funded; 5) Agroforestry, other than in the form of tree cultivation or farm forestry, is not placed very high on the agenda of most SFD's.
- Short duration MoUs and delays in their renewal of MoUs created uncertainty. This combined with meagre and inconsistent funding forced changes in the management set-up or severely affected the VVK activities.
- VVKs are perceived as a programme and not as an institutional entity that could contribute to FLE and capacity building on a sustained basis.
- Absence of comprehensive operational guidelines for VVK management and functioning.
- In absence of a policy or guideline, good performance of VVK primarily becomes a function of RRI's capacities and interest/effort of concerned individuals rather than system driven.

4.4. Funding for VVKs

As per the original design for the VVK programme, both the ICFRE (in the form of funds and technical support) and SFD (in the form of land or building and basic facilities as well as personnel) were supposed to invest in developing the VVK.

As per the guidelines for VVK (2008 and 2014), INR 3.28 million was proposed for each VVK over a five-year period. In 2014, the proposed budget allocation per VVK for five years was increased to INR 5.9 million. The detailed budget allocated in 2008 and since 2014 are compared and provided in the Table 25.

Table-25: Budget Provision for VVKs Compared: 2008 and 2014

S.No.	VVK Activity / Item	Amount Per VVK or Per State Per Year (INR)			
		2008 Guidelines		2014 Guidelines	
		1st Year	2nd Year onwards	1st Year	2nd Year onwards
1	Literature	300000	300000	300000	300000
2	Training programme	100000	100000	200000	200000
3	Model Nursery establishment	750000	0	1000000	0
4	Nursery maintenance (for 4 years)	0	50000	0	100000
5	Extension equipment & activities	330000	0	300000	300000
6	Contingencies & overheads	0	0	100000	100000
Total Amount per year (INR)		**1480000**	**450000**	**1900000**	**1000000**
Total Amount over 5 years (INR)		**32.8 Lakh**		**59 Lakh**	

As per current guidelines, each VVK should be allocated at least Rs. 10 lakh per year. Against this, the actual funding has been meagre and inconsistent to some of the VVKs. The funds are received and spent under the 'general' budget head of the ICFRE/RRI. No separate bank account is maintained for the VVK. Table 26 provides details related to availability and utilization of funds in the VVKs surveyed.

Table-26: Fund Allocation for VVKs (FY 2019-20)

Fund situation	VVK, Agartala	VVK, Bikaner	VVK, Coimbatore	VVK, Jagatsukh, Manali	VVK, Jabalpur	VVK, Haldwani
Fund received (INR)	100000	300000	81642	200000	DNA	DNA
Fund spent (INR)	80000	50000	81642	90000	DNA	DNA
Fund available other programmes	0	0	165000	0	DNA	DNA
Income from sale of seedlings	0	0	0	0	0	0

Source: Compiled from data provided by RRIS

ICFRE has been the main source of funds for the VVKs. Generation of funds from other sources has been limited. In some places, VVKs have leveraged resources from externally aided projects implemented by SFD (Tripura and Tamil Nadu). Avenues for generating income through the sale of technological products (seedlings) were not fully utilized. ICFRE did not encourage large-scale commercial production of seedlings in the model nurseries, as they were perceived to be primarily for demonstration and training purposes. Even where some income was obtained from the sale of the seedlings, there was no system in place to channel the fund back to the VVK.

In the first phase of the programme (2007-08 to 2012-13), the VVKs had relatively regular and better access to funds. Since 2012, and despite increased

budgetary provision for VVKs in 2014, the funding has been meagre. Despite low funding, some VVKs were able to implement more activities than could be expected. It was due to low overheads and part-time engagement of RRI Scientists and Technical Officers, whose salaries are not accounted under the VVK programme. The most significant casualty of inconsistent and low funding has been the model nursery.

Table-27: Issues and Challenges Related to Funding for FLE

- Low budgetary allocations from the government for the forestry sector in general and research, training and extension in particular leads to low availability of funds for FLE
- Low budgetary allocation to RRIs for extension programmes/activities
- Meagre and inconsistent funding for the VVK programme
- VVKs are unable to maintain core assets such as model nursery due to lack of funds
- No mechanism for VVK to retain and use the funds generated by it
- ICFRE policy for model nursery also constrain potential fund generation that could be used to sustain some core activities

4.5. Physical Infrastructure with VVKs

According to the terms of collaboration, SFD provided land, building, power connection, water facilities for irrigation, etc. In most of the cases, these were provided in the first phase of VVK operation, though in at least one case (Bikaner), the building provided was not in a condition to be used. The VVKs hosted by forest training institutes (Uttarakhand, Himachal Pradesh) and those in the proximity of the RRIs (Tamil Nadu) had access to fairly good training as well as other extension infrastructure. After the expiry of MoU, the building space and land allocated for VVKs were diverted for other purposes in many cases. The RRIs responded to this by relocating the VVKs within their own building/ facility. Currently, there is little physical infrastructure dedicated exclusively for use by the VVKs in the form of land or building. Most of it is shared. Table 28 provides the current status of the infrastructure and facilities available to the VVKs in different locations.

Table-28: Status of Physical Infrastructure Available with VVKs

Infrastructure	VVK, Agartala	VVK, Bikaner	VVK, Coimbatore	VVK, Jagatsukh, Manali	VVK, Jabalpur	VVK, Haldwani
Location & area of land originally allocated to the VVK by SFD	0.5 Ha. at Sadar Social Forestry Central Nursery at Hatipara	2 ha. of Beechwal Nursery of IGNP Stage II Div.	No land requested from SFD exclusively for VVK	Area allocated at FTI&RC, Sundernagar Handed back after 5 years; FRS land 5 Ha available for use to VVK	Area allocated at Sehari Nursery within SFRI campus	2 ha. for model nursery within UFTA Campus.
Infrastructure developed under VVK prog.	QPM production of different spp.	Hi-tech model nursery on 1ha.	Not applicable	DNA	Compost Unit and Storage	DNA
Management of VVK land and nursery	DCF, Research, TFD	DFO IGNP Stage II Div.	Not Applicable	Forester, FRS, Manali of HFRI	ACF, Research & Extension Center, Jabalpur	CF & Incharge Biodiversity Farm, UFTA
Current use of land originally allocated to VVK by SFD	Production of seedlings for distribution to farmers	Production of seedlings (intermittently)	Not Applicable	DNA for Sundernagar	Production of seedlings for distribution	Biodiversity Farm & Interpretation Centre

Current role of VVK in mgt of nursery	Seedling production on limited scale	None	Not Applicable	None	None	None
Building/ Workspace allocated for the VVK	Shared with FRCLE Building	Building at the nursery site unusable	Tree Information Centre of IFGTB	DNA for Sundernagar; FRS building shared	Facilities of TFRI utilized	Shatabdi Bhawan moved to Interpretation Centre of Biodiversity Farm
Training infrastructure	FRCLE facilities utilized	Facilities of local Agri Uni utilized	Facilities of IFGTB utilized	Facilities of FRS utilized	Facilities of TFRI utilized	Facilities of UFTA utilized
IT Infrastructure	Facilities of FRCLE utilized	None	Facilities of IFGTB utilized	None	Facilities of TFRI utilized	Facility of UFTA utilized

Source: Compiled from data provided by RRIs

Table-29: Issues and Challenges Regarding Physical Infrastructure of VVK

- Degradation of an asset in the form of the model nursery meant for the exclusive use of the VVKs due to lack of proper maintenance and funding
- Diversion of building space and model nursery to other purposes/programmes after the expiry of MoU
- Absence of strategy on how the infrastructure could be sustained after funding for the programme is discontinued

4.6. Human Resources with VVKs

There were no permanent or full-time personnel exclusively employed for the VVKs. There is a provision by ICFRE to provide funds for the personnel engaged in VVK activities, however, it is not clear if this was ever needed or done anywhere at any time. When the VVK programme was launched, the plan was for SFD to appoint a Nodal Officer to coordinate with the RRI and manage the affairs of the VVK by employing required personnel for the VVK, especially for model nursery or maintenance of the display items in the building space allocated to the VVK. It was also planned that ICFRE would train these individuals in various technologies and extension processes, apart from providing them with tools and materials for carrying out capacity building and extension activities.

Currently, the VVKs are mainly managed by the Extension Divisions of ICFRE Institutes. Scientists and officers in the Extension Division of the RRIs prepare annual plan, make arrangements for their implementation mostly with help from the SFDs and submit a progress report to ICFRE. They also manage the funds. SFD provides resource persons and helps to mobilize participants for the programmes as per request and their engagement is episodic. The situation regarding human resources in different VVKs is compared in the following Table 30:

Table 30: Status of Human Resources at Various VVKs

Human Resources	VVK, Agartala	VVK, Bikaner	VVK, Coimbatore	VVK, Jagatsukh, Manali	VVK, Jabalpur	VVK, Haldwani
Number of part-time Technical Staff involved with VVK activities	4	0	2	3	3	2
Who provides the technical staff for implementation	RRI & FD	N.A.	RRI	RRI	RRI	SFD
Number of Administrative Staff working for VVK	2	0	1	1	0	1

Admin staff provided by	FRCLE	N.A	RRI	RRI	N.A.	SFD
Number of Daily Wage Workers (DWW) employed by VVK	5	0	1	1	0	2
Who bears the expenses for DWW	SFD	N.A.	RRI	RRI	N.A.	SFD
No. of personnel engaged in conducting training programmes	3	4-5	6	3	3	2
Engagement of outside Resource Persons by host unit for VVK training	Yes	Regularly	Sometimes	Always	Some time	No
Number of days provided for VVK related activities per year by host	10	3-10	15	15	15	10-15
No. of individuals trained as master trainers	10	0	0	0	0	3
No of individuals trained in extension methods & tools	10	0	0	0	0	3

Source: Compiled from data provided by RRIs

Given the low level of operations and low funding, it is understandable that the VVKs did not need the services of full-time employees. However, absence of the qualified and trained personnel working full time also constrained many other activities, which could have been taken up.

4.7. Performance, Effectiveness and Impact of VVKs

4.7.1. Performance Assessment of VVKs

An assessment was done for VVKs based on their performance across 23 different criteria. For each criterion, the performance was scored out of a maximum score of 10. The purpose of this assessment was to identify factors and conditions that have led to better performance and to identify areas where improvements are needed. The scores given on different criteria to different VVKs are provided in Annexure 9.

As per the assessment, the VVKs located close to the RRIs and have mobilized funds from other sources seem to have performed better. Also, the VVKs, which are under the direct management of the RRIs or its Centre seem to have performed better and are less affected by changes related to the lapse of MoU or reduced funding.

4.7.2. Effectiveness and Impact of VVKs

Notwithstanding anecdotes of success by some of the host organizations for VVKs, a firm assessment with regards to the effectiveness/impact of the VVKs was constrained due to the following reasons:

1. Nursery and seedling production were the only technology that was promoted using multiple strategies. However, in most cases, they are no longer with the VVKs and the beneficiaries record doesn't exist.
2. The details of beneficiaries from trainings (name, contact details) have not been maintained.
3. Extension and capacity-building activities are discrete in nature and not interconnected to contribute to a common outcome.
4. No internal data or studies on the outcomes of VVK activities could be found.
5. There is little documentation of the success stories from activities of the VVK.

4.8. Comparison of VVK and KVK Systems for Front-line Extension

KVKs are the primary platform for FLE and capacity building under ICAR umbrella. As an integral part of the National Agricultural Research System (NARS), KVKs aim to assess location-specific technology modules in agriculture and allied sectors, through technology assessment, refinement and demonstrations. They function as Knowledge and Resource Centre of agricultural technology supporting initiatives of public, private and voluntary sectors for improving the agricultural economy of the district and link the NARS with extension system and farmers. The KVK scheme is 100% financed by Govt. of India.

VVKs were conceptualized as a medium for FLE and were partially inspired by the KVK system. Like KVKs, the main idea of VVK is to test and demonstrate relevant technologies developed by RRIs and build knowledge and skills among its farmers and rural community. Similar to KVK system, host institutions are identified, which provide land for demonstrations and trials. Unlike KVKs however, SFD is the only type of host institution for VVK. Comparison of the two systems of FLE across different parameters is given in Table 31.

Table-31: Comparison of VVK and KVK Systems

Parameters	VVK	KVK
Umbrella & Funding Institution	ICFRE	ICAR
Year of first establishment	2008	1974
Total number in year 2020	31	715
Geographical coverage	State or Union territory	District or sub-district
Process of establishment	Based on application by ICFRE Institute (RRI) to State Government and 5 year MoU	Based on application by interested institutions to serve as host; application appraised for suitability; MoU with Govt. Organizations; Indemnity Bond with NGOs
Criteria & Conditions for establishment	SFD to provide land, building, basic facilities for functioning as well as personnel; No specific condition related to area of land to be provided	15 to 20 hectares of suitably located land, centrally located with easy access
Type(s) of Host Institution allowed	SFDs (Training, Research, Extension, Development wing of SFD preferred)	Different types of institution - ICAR RRIs (69); Agriculture Universities (493); NGOs (102); State Departments (34); PSUs; Other educational institutions
Institutional setup	ICFRE --> RRI (Extension Div) --> SFDs --> SFD Wing/FTI	ICAR --> ATARI --> Host Institution
Mandate	Broad mandate targeting multiple stakeholders	Vision and mandate clearly articulated targeting farmers and rural youth & women
Physical Infrastructure & Resources	Model nursery; Building and training facilities of RRIs and SFDs	Own campus; Nursery; Trial plots; Administrative building; Training hall; Hostel for trainees etc.
Human Resources	No exclusive full-time staff; staff deputed on ad-hoc basis by RRIs and SFD	Headed by full-time Sr. Scientist; 5-6 full time Subject Matter Specialists; 5-6 full time technical support staff
Areas for which funding provided	Establishment and maintenance of model nursery; Training; Literature; Extension equipment;	Infrastructure dev; Salary for Personnel, OFT, FLD, Training, Other extension activities etc.
Average Annual Investment (201819)	INR 1 - 2 Lakh (According to 2014 guidelines, provision of INR 10 lakh per year, 2nd year onwards)	Around Rs 1 crore or more Revolving fund of about Rs. 5 million (case of VVK Ambala)

Types of activities undertaken	Literature distribution; Model nursery demonstration; Production of quality seedling; Training & Extension programmes; TGM by some VVKs	OFT; FLD; Demo units; Training including vocational training; Knowledge resource centre and farm advisory; Diagnostic Lab Services; Mobile Advisory Service; Production of technological products; Various extension activities – Farmers Mela etc.
No. of Programmes	1-3 training programmes per VVK per year; Over 10year period (2008-18) About 11-12 training per KVK; 26 model nurseries; About 5400 seedlings distributed per nursery; About 17000 literature distributed per VVK	Technology Assessment: Av. 10 Technologies and 50 OFTs per KVK Frontline Demonstration: Avg. 300 technologies covering 87 ha. area per KVK Capacity Development & Training: Avg. 80 training per KVK Extension Activities: Avg. 914 per KVK
No. of people covered under	2008 – 2018: Literature: 4,91,950 copies of 441 publications;	In 2019-20: Training: Avg. 2400 events per KVK Extension Activities: Avg. 28000 per KVK
various programmes	Training: 328 trainings, 17559 participants, 799 days of total training. Seedlings distributed 1,40,829	Distribution of Technological Product: Avg. 3650 persons per KVK
Visibility & recognition among target group	Low – few, including SFD officials, are aware	High – has own website, campus centrally located; own logo; signboards prominently displayed; many programmes and participants

Source: Compiled by the Study Team

Compared to KVKs, the VVKs operate at a very limited scale and they do not have their own campus. The buildings and infrastructure for extension and capacity building under KVKs are on a larger scale for it to be able to function as an independent entity. VVKs have to depend upon the facilities and resources of the SFD or RRIs. VVKs also do not have full-time scientists or technical staff. Moreover, compared to the VVKs, the KVKs are much better funded. KVKs also have well-established institutional arrangements for the management of the institution, including operational guidelines for planning, implementation, documentation, monitoring and reporting. KVKs are able to comprehensively target the farmers as they operate at the district/sub-district level and their extension efforts are much more tuned to local conditions. The demand-driven application process adopted for engagement of different types of institutions as hosts, which are appraised for their interest, capacity and suitability, coupled with robust monitoring of performance ensures that the host institutions for KVK deliver the desired results.

Considering the limited mandate and very limited and irregular funding, the VVKs have performed well to deliver on their mandate. However, various aspects of KVK system can be considered for adoption for VVKs, especially if the VVKs mandate is expanded, as recommended. While some of the characteristics of the technology dissemination, capacity building and extension activities are unique to the agriculture sector, there are significant commonalities to consider various best practices based on experience and learning of the KVK system for adaption in the VVK system. These are:

1. Demand-led process for establishing KVKs through criteria-based identification of host institution
2. Eligibility of multiple types of institutions to serve as the host institution
3. Creating and capacitating a single frontline institutional platform for extension activities and capacity building
4. A network of district-level extension-focused institutions, able to fine-tune technologies to local conditions and provide locally relevant solutions
5. Clearly articulated Vision and Mandate with a clear focus on productivity, income enhancement and vocation training

6. Focused target group in the form of farmers, farm/rural women, youth and farm (forest) dependent and agriculture/forest extension workers
7. Frontline technology assessment and demonstration of the various technologies- an integral part of the capacity building and extension strategy
8. Working through grassroots and community-based groups and institutions such as Farmer Groups, Producer Groups, Farmer Field Schools
9. Detailed Standard Operating Procedures and Guidelines for establishment and functioning of KVKs, including monitoring and reporting systems
10. Provision of significant and regular funding and provision of Revolving Fund at the KVK level by generating funds through the sale of technological products. Revolving Fund ensures that some core activities are sustained.
11. Protection of ICAR investments as the movable and immovable assets created with ICAR funding cannot be diverted. In case of closure of KVK, the assets or the investments have to be returned to ICAR.

4.9. SWOT Analysis for the VVK System

A SWOT analysis was done for the VVK system based on findings from discussions with officials of the RRIs, SFDs, extension and institution building experts and considering the findings of the study.

4.9.1. Strengths/Opportunities

1. Rich portfolio of relevant technologies and package of practices available with the RRIs: suitable technologies for dissemination through VVKs needs to be identified and result-based action plan for extension can be developed.
2. Coverage of all the agro-ecological zones by ICFRE through its network of RRIs and Advanced Centers
3. Several ongoing research by the RRIs are also relevant for extension through VVKs; VVKs, in turn, could also contribute to the research conducted by the RRIs by facilitating On-farm Trials (OFTs) to help fine-tune the technology to suit the local conditions
4. Partnership with SFDs is a key strength of the VVK system, and mechanisms should be created for linking with the SFDs. In cases where they host the VVK, measures for developing their long-term commitment should be created. Longer duration MoU, developing institutional arrangement for joint periodic review of VVKs, consistent substantive funding for VVKs etc. could help in better engagement by SFDs.
5. Technological Backstopping by institutes with high credibility. The RRIs have qualified human resources conducting quality research in many relevant areas and are in an excellent position to provide quality technical backstopping support to the VVKs.
6. Focus on agro-forestry development by Govt. of India: With the formulation of Agroforestry Policy, 2014, and focus on strengthening the livelihoods and income of rural communities, especially farmers, initiatives and efforts which contribute to this goal are likely to receive political, policy and greater financial support.
7. Increasing focus on climate change mitigation and adaptation, carbon forestry, biodiversity conservation, sustainable forest management in community forestry/JFM areas; reducing wood consumption, wetlands conservation, mangrove conservation, waste/pollution management, strengthening NTFP based livelihoods, etc. create new avenues for interface with communities.

4.9.2. Weaknesses/ Threats

1. Vision and Mandate or target group for VVKs not articulated clearly and cogently
2. Multiple extension activities targeting the same target group through different programmes are not necessarily synergised
3. Short duration MoUs with State Government/ SFD with no continuity
4. The large operational area (whole state) of the VVK creates issues and challenges for effective FLE.
5. Weak ownership and low interest for the VVK programme within SFD. There is a perception that it adds little value to their existing body of knowledge; adds to their workload without providing many additional resources;
6. Mismatch between the priorities for extension by RRIs and SFD's priorities. One focuses on agro-forestry, other focus on conservation in recorded forest area.
7. Low priority and low allocation of budget to training and research activities: especially in the forestry sector
8. The VVKs are mostly focused on training and there is not enough thrust on activities such as technology assessment, front-line demonstration, production of technological products and technical advisory.
9. Absence of a cogent VVK wise capacity-building strategy for the target group in the state/region.
10. Most of the trainings seem more inclined towards information dissemination and awareness building than skill development.
11. Absence of dedicated full-time staff for the implementation of VVK activities. System for compensating the personnel engaged in VVK is not clear.
12. Most of the persons who work part-time for the VVK, are not trained in extension strategies and tools.
13. Meagre and inconsistent funding for extension in general and in particular has resulted in non-strategic extension efforts
14. Lack of proper monitoring of results/outcomes. Monitoring focused on physical and financial outputs/achievements.

05

RECOMMENDATIONS FOR IMPROVED VVK FUNCTIONING AND MANAGEMENT

This chapter provides various suggestions to improve the functioning and performance of the VVKs and their effective management to successfully establish a robust system for FLE and capacity building. The suggestions include changes in the design, organization, establishment process and management system of VVKs. Given the scope and nature of proposed changes, it would be fair to say that a 'modified VVK system' is being proposed in which a network of VVKs is recognized as the primary platform under the ICFRE umbrella for FLE and capacity building for farmers and forest-dependent communities in forestry and allied sectors. Many of the recommendations provided in this chapter are further elaborated in Chapter 6, which provides detailed strategies and guidelines for the establishment and management of VVK under the modified system.

5.1. Reimagining the Forestry FLECB System through VVK

VVKs were designed as one of the schemes for Front-line Extension and Capacity Building (FLECB) currently implemented by ICFRE in partnership with the SFDs. It is proposed that instead of being treated as a scheme, VVKs should be developed as robust and well-capacitated institutions

for FLECB for forestry and allied sectors. Under the modified system, a network of VVKs spread over different agro-ecological regions and operating at the level of agro-ecological sub-zone or a cluster of districts, organizing and managing strategically planned extension and capacity building activities to serve the needs of a well-defined target group. With the clearly defined mission and mandate, the VVKs would be engaged in various strategically planned comprehensive sets of activities for FLECB based on local needs and conditions, including technology refinement to suit the local conditions. They would be operating under the supervision of ICFRE institutes and managed by a variety of host institutions -- including RRIs and SFDs -- carefully selected by ICFRE through a demand-led application process and operating under the detailed guidelines and procedures prescribed by the ICFRE.

5.2. Revisioning the VVK: Vision, Mission and Mandate

Presently VVK's mandate is broadly articulated and is prone to different interpretations by different stakeholders. A clearly articulated Vision, Mission and Mandate will help the VVKs to develop as effective and focused institutions.

Box 3: Proposed Vision, Mission and Mandate of VVK

Vision: Science and technology-led growth leading to enhanced productivity, assured income and sustainability of forestry and forest-based livelihoods.

Mission: Growth of forestry and allied sectors focusing on needs of farmers, tree growers and forest-dependent communities through the application of appropriate technologies in specific agro-ecosystem perspective.

Mandate: Technology assessment and demonstration for its wider application and capacity building of farmers, tree growers and forest-dependent people focusing on rural folk women and youth on forestry, agro-forestry, forest-based enterprises and allied activities.

5.3. Developing VVKs as Primary Platform for Front-line Extension

Recognising and developing VVKs as the primary institution for extension and dissemination of knowledge and skills to farmers, tree growers, forest dependent communities, rural youth and women and their formal or informal institutions in the form of JFMCs, Van Panchayats, Producer Groups, Social Forestry Committees, Self-help Groups, forest-based enterprise groups etc., as well as field extension workers, would go a long way in improving its relevance.

Currently, the outreach to these groups is through different platforms and various extension schemes of ICFRE. While most of them are managed directly by the Extension Division of the RRIs, a few are implemented through the VVKs. It is recommended that all the extension schemes that target these target groups as VVK and are of relevance to them, should be converged under the VVKs. Schemes such as Demo Village, Farmer's Mela, Modified Direct to Consumer Scheme (part of the schemes and if the technology is for use at village, group or household level) and part of normal extension activities, could be converged with VVK platform. Similarly, the VVKs should determine the topics/issues they want to address depending upon the characteristics of the region and needs of the target group that they service. This will help refine and focus the extension strategy vis-a-vis the target group, bring coherence between different strategies adopted for dissemination and ensure higher investment in the VVKs, thereby boosting their significance and profile.

5.4. Target Group for Extension through the VVKs

The justification and relevance of a VVK-type decentralized extension institution improve significantly if the extension and support need of farmers, tree growers and forest-dependent groups are prioritized. Synergies with other similar programmes and linkages with relevant institutions can be built by keeping the target community at the centre. One doesn't need a platform like VVK to target big forest-based industries or big institutions such as SFD, as there are many other ways of delivering the outcomes of the research much more efficiently and effectively to those groups. Three categories of people should be designated as the primary target for VVK based extension. They include:

1. Farmers in States and districts where the potential for agroforestry or tree cultivation on private land is high. RRIs need to identify and list out all such districts and rank them according to their potentiality. In Chapter 6, the criteria for scoring and ranking are provided.
2. Individuals, communities and groups in forest-fringe villages involved in the collection, production, value-addition of forest products and engaged in forest-based enterprises such as seedling production, NTFP collection and processing, artisans using forest products etc. Such groups are easily found in regions/districts under large area of natural vegetation and in tribal areas. In many cases, these communities are organized into JFMCs. Within such communities, women and youth as well as their associations should be prioritized for the extension.
3. Individuals and communities in many States with natural or planted forests on their private or community land. Examples include Mushtarka Malkan forest in Punjab; Village/ Community forest in most of the North-eastern states; Village forests in other states such as Karnataka, Odisha; tribal blocks/districts in various states with community rights have been provided under FRA, or even individual Patta (many of such land have either forest vegetation or are suitable for agroforestry); places where communities are managing Community Reserves etc.

Other groups that are identified as relevant could be added to this list. However, it is recommended that the list should not become too disparate and the focus on rural communities; especially youth and women should not get diluted.

5.5. Strengthening of VVK Network

The Extension Strategy and Action Plan (2018 to 2023) of ICFRE propose to establish a total of 53 VVKs by 2023, and ICFRE's Vision 2030, aims to create a VVK in each 'block' of the country. As there are 718 districts and more than 6600 blocks in India, the aim seems ambitious. The KVK network of around 720 KVKs operating at district/sub-district level has been established over the last 47 years. Therefore, an incremental approach for the establishment of new VVKs within a timeframe of the next five, ten and twenty years is suggested. We are recommending a programme where new VVKs get established/created over five-year period and each VVK gets supported for at least 5 years.

Considering the possibility of each RRI establishing one to three new VVKs per year, resulting in the establishment of 36, 72 or 108 new VVKs respectively over a five-year period or 110, 191 or 272 new VVKs over a ten-year period (assuming no VVKs are created in year 1 due to preparatory work required). The following table explains the number of VVKs that would get established under different scenarios and its implications for geographical coverage:

Table-32: Scenario-based Numerical Status of VVKs

Scenario	No. of New VVKs per RRI per year		
	One	Two	Three
No. of New VVKs over 5 year period (2021-2026)	36	72	108
No. of New VVKs over 10 year period (2021-2031)	81	162	243
No. of existing VVKs	29	29	29

Total no. of VVKs by 2026	65	101	137
Total no. of VVKs by 2031	110	191	272
Average no. of VVKs per State by 2026	2 to 3	3 to 4	4 to 5
Average no. of VVKs per State by 2031	3 to 4	6 to 7	9 to 10
Average no. of districts covered per VVK by 2026	11	7	5
Average no. of districts covered per VVK by 2031	6 to 7	3 to 4	2 to 3

The number of new VVKs that could be established would depend upon, the capacity of the Extension Division at RRIs to manage the additional workload; whether additional capacities are created in the division to establish, support and manage the VVKs efficiently and effectively; availability of assured funds for supporting each VVK for at least five years; and the number of high potential regions (cluster of districts) identified in the operational area of the RRI.

Based on the current understanding, it is recommended to establish at least one VVK per RRI per year. This would be closest to what the Extension Strategy and Action Plan, 2018 also proposes. It is also recommended that a five-year framework for establishing the VVKs and a ten-year framework for supporting them be adopted, with the principle that each VVK should be supported for at least five-year duration after establishment (1+5) to begin with, for it to be able to establish the required systems, procedures, and capacities to function effectively. This strategy would result in the establishment of 65 VVKs in five years (by 2026) covering most of the states and UTs with average 2 to 3 VVKs in each state -- larger states may have more and smaller states have a smaller number of VVKs.

5.6. Strategy for Establishing New VVKs

The experience from the KVK system suggests that a small-size district is the most effective operational unit for front-line extension in the agriculture sector. While a similar approach could be adopted in the long term (a time-frame of 30 to 40 years) for establishing VVKs, in the short and medium-term, it is suggested that one of the following approaches for geographically locating the VVKs be adopted:

1. Establishing the VVKs first in 2 – 3 high potential regions/districts with respect to forest dependency on local communities or forest-based micro-enterprises in each State.
2. Establishing one VVK in most, if not all, of the 127 agro-climatic zones classified by ICAR under the National Agriculture Research Project.
3. Establishing one VVK in each of the agro-ecological sub-zones – there are 60 such sub-zones - identified by the National Bureau of Soil Survey and Land Use Planning.
4. A combination and 1 & 2 or 1 & 3.

Given below are some suggestions for changes in the strategy adopted for VVK establishment:

- Before establishing new VVKs elsewhere with other host institutions, in the first phase, all the ICFRE-RRIs, Centers and Field Research Stations or Field Units, should establish a VVK wherever feasible. These VVKs could serve as models for other VVKs. In some RRIs, the VVK already exists either at their campus or at their field station. They also need to be strengthened according to the suggestions made in this report.
- Hub and spoke model with centralized VVK imparting skill upgradation and technological dissemination training while general knowledge dissemination or awareness programme should be taken up separately.
- Since SFDs are the primary stakeholders of ICFRE/RRIs, the creation of new VVK need to be taken up in consultation with SFDs or their recommendation as liaisoning with farmers or communities.
- The VVK located at the RRI could serve as the 'central VVK' for other VVKs based on a hub and scope model of extension.

- VVKs should be established in an incremental manner starting with the development of some 'Model VVKs', focusing on quality and not quantity. It should be a demand-led process, wherein interested agencies apply, get appraised and selected, based on clearly established criteria, and a clear understanding of their roles and responsibilities as well as contribution to the VVK programme. The agreement (MoU) should be carefully drafted and should be comprehensive.
- Apart from assured long-duration funding for the VVK programme, the ability of the RRI's to provide quality technical backstopping to the VVKs should also be considered together with the capacity of the Extension Division to manage the programme.
- While in the beginning, it is helpful for ICFRE Institutes and SFDs to play the role of the host institution for VVKs as new ideas and new institutions need close nurturing. Going forward, ICFRE should consider opening the opportunity to various other institutions that are working on forestry and agroforestry-related issues like Central or State Agriculture Universities/Colleges with programmes in Forestry; NGOs working with forest-fringe communities, NRM-based livelihoods or on forestry/agroforestry/NTFP based enterprises, PSUs and forest-based Private Enterprises etc., among others. The diversity of host institutions would help bring in a variety of perspectives. A list of various universities and colleges with forestry programme and faculty is provided in Annexure 12.
- In case of SFD, the VVK should be located with its Training or Research Wing. In some cases (such as Bikaner), the VVK was linked to the Territorial or Social Forestry Divisions. In instances, where the VVKs are linked to the Training Wing, they would be able to leverage the existing training facilities (as in Haldwani), while those located with the Research Wing would be able to engage in technology assessment and demo plantations.
- Even in cases where SFD is not hosting the VVK, institutional arrangements should be created for their close involvement in the process to create greater ownership of the programme and help develop a more suitable condition for the VVK to operate on various forest or forestry-related issues. The arrangements for their participation could be at various levels, including the process of identifying and appraising potential host institutions, being part of the state or regional/district level review committee for the VVKs etc.
- Organizations which currently host the KVKs may be worth considering as potential hosts for VVKs as well for a quick and effective way of linking VVKs with KVKs. It will provide opportunities to both to leverage each other's resources and capacities for the extension of technologies in areas of common interest. This could also be a model for showcasing how the resources of two premier research institutions can be combined for effective extension. This may, however, require an agreement with ICAR especially in cases where the VVK and KVK may be located in the same campus and share infrastructure and other facilities. A list of
- NGOs hosting KVKs is provided in Annexure 13. There are also universities/colleges which host KVKs and also have department of forestry or faculty for agroforestry.
- MoUs with the host organizations for VVKs should be for a longer duration of ten years (10) and their renewal should be initiated at least six months before the MoUs are due to lapse.

5.7. Institutional Setup and Design of VVKs

Currently, the VVKs function in a very limited capacity, co-ordinated part-time by a designated (nodal) person either from SFD or from the Extension Division of the RRI. The VVK programme should aim at developing the VVKs as independent and well-capacitated institutions - with clearly defined mandate and functions, assured funds and capable functionaries.

The institutional structure for the VVK may vary and following possibilities exist for the host institution:

- RRI or their center hosts the VVK;
- SFD is the host;
- Other government institution such as central/ state university is hosting; and
- An NGO or a private institution is the host.

The institutional structure and arrangements would differ significantly from some of them. The differences are presented in Chapter 6.

The VVKs should be treated as a body and should be able to open and operate their bank accounts in the name of the VVK. In cases, where there are legal constraints, the host organization should open a bank account exclusively for use of VVK. Each VVK will have at least two accounts – one regular account to receive the grant from ICFRE and the other solely for maintaining the Revolving Fund. The details are provided in Chapter 6.

5.8. Human Resources and Infrastructure for VVK

The VVKs should be capacitated with a team of full-time staff; proper infrastructure facilities - some for its exclusive use and some on a shared basis - as well as access to an adequate amount of funds. The FLECB activities of VVK and the full-time personnel would be fully funded by ICFRE. Whereas, the physical infrastructure would be partially funded if needed. The nature and extent of support suggested by ICFRE are discussed in the next section as well as in Chapter 6.

It is recommended that a team of three persons for each VVK, headed by a Sr. Scientist cum VVK Coordinator to implement the various activities of the VVK. The details of proposed full-time staff are provided in the Table 33.

Table-33: Full-time Staff for VVK

Designation/ Position	Nature of engagement and role	Proposed qualifications
VVK Coordinator cum Sr. Scientist	Management and coordination of the VVK, including planning and implementation of activities, fund mobilization, documentation and reporting, networking etc.	Doctoral degree in the relevant subject including relevant basic sciences. Scientist C or above with at least five years of experience in participatory research, extension, training preferably in relevant areas for VVK
Subject Matter Specialist/ Scientist/ Technical Officer	Support VVK Coordinator in planning and implementation of VVK activities including frontline demonstration, demo plots, capacity building, content development for extension material etc., as well as VVK management; Resource person for training programmes	Minimum Master's degree or equivalent in the relevant discipline. Minimum three years' experience in the technologies that are identified for testing or dissemination in the region/ district
Technical Staff/ Nursery Manager	Responsible for development, maintenance and management of demo plots including model nursery; production of technological products; Maintenance of records	Minimum graduate in science with three to five years of experience in plantations/ nurseries

The VVK Coordinator cum Senior Scientist and the SMS/ Scientist should be from relevant disciplines, which would best suit the requirements of FLECB. The detailed responsibilities of the VVK staff are provided in Chapter 6. There would be part-time staff for administrative support and would be provided by the host agency. The VVK would have access to immovable and movable infrastructure, some of which would be for its exclusive use.

Table-34: Proposed Infrastructure for VVK

Immovable Infrastructure	Movable Infrastructure
Land for demo plots and model nursery Office building Staff quarters Training hall Trainees hostel & mess Irrigation facilities and drainage system Work shed Storage godown Electrical connection	Furniture and fixtures in the office, training hall, hostel & mess. State-of-the-art communication facilities and internet connection Library Laboratory equipment, office equipment Farm/ nursery implements, machinery and tools Small weather station Vehicles (one four-wheeler and one two-wheeler)

5.9. Proposed Investment Model for VVKs

Two investment models are proposed for the modified VVK system. In the 1) low investment model, the proposed budget is about INR 44 million per VVK over a period of five years and under the 2) high investment model, the budget is about INR 93 million per VVK over five years. The details of the two models including the amount allocated for different activities for funding by ICFRE are provided in Annexure 14 and Annexure 15. Comparision of the investment models are given in the Table 35.

Table-35: Comparison of Investment Models

Parameter	Existing Model for VVK	Low Cost Model for Modified VVK	High Cost Model for Modified VVK
Budget over 5-year period per VVK (INR)	5.9 million	44 million	92.6 million
Expected Contribution by Host Institution	Land for model nursery & trials, Fencing, Building & fixtures, Water supply, Electricity, Personnel on payment basis	Land (2 to 5 ha minimum, 2 ha in hilly region; 5 ha in plains); Fencing; Building and fixtures for office, training, hostel accommodation; Water and electricity supply; Administrative staff & other technical staff (part time)	Land (2 to 5 ha minimum, 2 ha in hilly region; 5 ha in plains); Fencing
Type of resources and activities supported by ICFRE	Model nursery establishment and maintenance; training programmes; literature; personnel on work basis; training and extension equipment; overhead expenses	All extension and capacity building activities including model nursery, DV, TGM, OFT, normal extension; 3 full time staff; support of INR 45 lakh towards physical infrastructure; Training and extension equipment and vehicle	Everything except land and fencing; 9 full-time staff; lab; office building; model nursery; FLD, OFT, TGM, DV etc.

5.10. Funding for VVKs

Lack of adequate funding has been a major issue for the VVKs. In the modified system it is visualized that ICFRE would be the main source of funds for the VVKs. Out of the two new investment models proposed, the low investment model is recommended as a more realistic option considering the availability of funds under government programmes for extension and capacity building, especially in forestry sector. For the same reason, it would be more feasible for ICFRE to make efforts to arrange for funding for the VVK programme through an Externally Assisted Project (Grant plus loan). Under the low investment model for the modified system, it is estimated that ICFRE would need about INR 476 to 587 crore over a period of ten years, depending on whether one or two VVKs get established per RRI per year. The details are provided in Annexure 16.

Other than external aid, it is suggested that ICFRE should also explore the following options for raising funds for the programme:

- Increased allocation for front-line extension within the government grant for ICFRE
- Allocation from grant funds managed by ICFRE for Decision Support System scheme (about 77 crores budgeted for environmental awareness, education and training in FY 2021-22)
- Creating a system of building extension cost within the research proposals or allocating alternatively may fix a percentage of the research funds to be used for extension.
- Leveraging funds from CAMPA or Green India Mission

Apart from direct grant from ICFRE, the VVKs (or the Host institution on behalf of the VVK) should be encouraged to mobilize funds from other sources:

- Training and capacity-building funds available with projects and schemes related to forestry/ agro-forestry in the State
- Grant fund support from bi-lateral and multi-lateral institutions
- Grant fund for technical collaboration with other technical institutions
- Grant fund available through CSR activities
- Sale of technological products such as seedlings, bio-fertilizer etc
- Service fee for services provided.

5.11. Revolving Fund Facility

A Revolving fund is proposed for each VVK with initial seed funding of Rs. 5 lakh from ICFRE. This would be one-time support and the money would be used to produce technological products, including seedlings, for sale to farmers and others. The Fund would get replenished and this fund would help in maintaining some core activities of the VVK. A separate bank account should be maintained by the VVK for Revolving Fund. The guidelines for the Fund are provided in Chapter 6.

5.12. Shortlisting of Technologies to be Disseminated through VVKs

Over the years, ICFRE and partner Institutes have developed a varied and substantial portfolio of technologies and best practices in forestry and allied sectors. Each ICFRE institution may identify and list the technologies which they could disseminate to the focus target group through the VVKs and prepare a five-year outcome-based extension programme along with an action plan to promote the specific technologies through the VVK platform. The RRIs, through their network with other research institutes, should also help the VVK prepare a comprehensive list of various relevant technologies available from other sources but suitable for the region they are located in.

5.13. Information, Education and Communication Strategy for VVKs

Considering that the VVKs will focus on farmers and other rural populations for their extension and outreach activities either directly or through field extension, the ICT strategy should be included:

1. Front-line Demonstration of models
2. Focus on practical training and experience-based learning
3. Participatory research for technology verification
4. Peer (farmer-to-farmer) learning
5. System of handholding and further support inbuilt with extension strategy
6. User-friendly IT-based extension and mobile-based advisories

5.14. Convergence and Linkages

5.14.1. Linkages with KVKs

KVKs, based at the district or sub-district level, is well-placed to carry out outreach and extension programmes, and leveraging their resources would significantly improve the effectiveness of the VVKs over the past few years, despite an agreement between ICFRE and ICAR and supporting guidelines by ICFRE for the RRIs, the results have not of the desired level anywhere. Some RRIs have done better than others.

Agro-forestry is an area of interest and focus for both ICAR/KVKs and ICFRE/VVKs and could provide significant opportunities for collaboration. Institutions affiliated with ICAR and ICFRE have, over the years, developed a substantial portfolio of technologies in related areas. However, the nature, scope and extent of linkage with KVKs need to be expanded. Mechanisms may be developed for regular interaction with KVK Chief Scientist and other technical staff. Under the MoU signed with ICAR, the Forest Extension Division of the ICFRE institutes have been designated as the Nodal Division. As per the MoU, the subject matter experts of the Institutes appraise the new techniques related to forestry to the beneficiaries, in programmes organized by KVKs. One can foresee a similar arrangement continuing through the VVKs.

A strategic partnership may be achieved by notifying some KVKs as the extension partners of VVKs and providing them with technical, programmatic and financial support as follows:

1. Select organizations currently hosting KVKs as the host agency for VVKs.
2. Identification of suitable technologies related to agro-forestry and related aspects for the extension available with ICFRE Institutions.
3. A draft guideline for collaboration with KVK exists, for technology demonstration, verification and capacity building. However, there is no budgetary support provided for these collaborative ideas.
4. Developing a technology-specific strategy and action plan involving technology demonstration and capacity-building for its adoption in a mission mode.
5. Inviting proposals from KVKs for financial support towards related extension activities, including additional human resources needed for the purpose.
6. Entering into a formal agreement (MoU) with KVKs, clearly outlining the purpose and scope as well as roles and responsibilities of each party, supported with a budget. ICAR may be requested to identify at least one suitable KVK in each state for collaboration with local VVK or to be designated as VVK.

5.14.2. Linkages with Private Sector and NGOs

Three categories of private sector organizations that can be part of VVK based extension of technologies:

1. Forest-based private enterprises (private companies, producer companies, cooperatives, individuals or producer groups) – Some of the

large companies such as paper production companies may be interested in developing their raw material sources, whereas smaller enterprises may be concerned with the issues of access to appropriate technology and market.

2. Organizations involved in the promotion of forestry, agro-forestry, rural livelihood strengthening, especially in forest-fringe villages through ground level interventions can help extension efforts by acting as the host institution. These include organizations that are working on JFM, CFM, biodiversity or wildlife conservation, ecotourism etc.
3. Organizations serving as the host institutions for KVKs
4. Private organizations as part of their CSR activities towards plantation, forestry, wildlife, livelihoods strengthening etc.

While in ICFRE institutes, there have been some efforts for engagement with the private sector for e.g. Industrial-Farmer Melas by VVK Coimbatore. It may be worth incorporating the same in a systemic manner. A strategic push to involve private organizations, including NGOs would go a long way in creating a multiplier effect for extension, targeted towards farmers and villagers. This could be facilitated by:

1. Opening VVK hosting to private institutions as well as NGOs.
2. Project-based collaborations between VVKs and private organizations to promote technologies and practices aimed at outcomes of common interest.

5.14.3. Linkage with International Organizations

There are two categories of organizations – one which engages in research and promotes related technologies such ICFRAF, CIFOR, IUCN etc., and can be a means for an extension on a larger scale and the second, which provide funds such as bilateral and multi-lateral funding organizations such as JICA, KfW, the World Bank, GIZ etc. In order for the VVKs to get linked to such organizations, either directly or through ICFRE, it would be helpful if the VVKs are established as independent body corporates so as to submit proposals for collaboration or funding on their own. The other option of linking them through the ICFRE – where ICFRE becomes the unit for such agreements and funding which are then passed downwards – already exists, and only requires that the VVKs could be presented as credible institutions that can implement the activities at the ground level. This is possible if they have the required human and other resources to effectively implement the programmes.

5.14.4. Linkages with Ongoing Programmes in Forestry and Allied Sectors

Apart from KVKs, the VVKs may also leverage the resources from ongoing programmes of Central and State governments related to forestry and allied areas. The study highlights that in places (such as Tripura and Tamil Nadu), additional resources from ongoing forestry projects have helped extension activities. Linkage with other programmes funded by MoEFCC (Green India Mission, NAP etc.) as well as other agencies (RKVY, MGNREGA, NHM, etc.) and the State Governments will help in ensuring greater impact. As a first step, the ICFRE institutions could consider generating a list of various technologies available with them for dissemination to farmers and assess their suitability with ongoing programmes.

5.14.5. Linkages with Community/Farmer Groups

The Demo Village programme already implemented by ICFRE institutions is recommended for merger with the VVK programme. With existing characteristics, it should be further expanded. In the North-eastern States, where large areas of forests are under the ownership of communities and high forest

dependence, direct interface with communities on sustainable forest management as well as for strengthening forest-based livelihoods could be a key focus of the DV under VVK. Similarly, districts that have high potential for agro-forestry or TPOFA should be the focus for DV under VVK. Existing community-based institutions such as JFMCs, Van Panchayats, Community Reserve Management Committees, Social Forestry Committees, Farmer Producer Groups, SHGs etc., could be made partners in the extension process.

5.15. Stakeholder Engagement Plan

A detailed strategy to effectively communicate with various stakeholders should be prepared. The main stakeholders include, *inter alia*, ICFRE, the RRIs, SFD and other Host Institutions, the target groups etc. The plan should be specific to each stakeholder and should specify, among other things, purpose, frequency, methods and tools, place of communication etc. The plan would help in gaining support from the stakeholders and facilitate their effective engagement in the process. The scope and details of the Stakeholder Engagement Plan for VVK will vary according to the nature of the activities, the characteristics of the stakeholder, their location and the potential impact of the institutional activities on them and the risks involved in the absence of their proper engagement. The Stakeholder Engagement Plan must include the following minimum elements and must be publicly available in a form and language appropriate to the relevant stakeholders and disseminated proactively to them:

- Public engagement was undertaken during activity development
- The stakeholders, their relevant interests, and reason for their inclusion
- The steps and actions to achieve meaningful consultation and inclusive participation including information dissemination
- Roles and responsibilities for the implementation of the Plan
- The timing of the engagement throughout the activity cycle
- The budget for stakeholder engagement throughout the activity cycle and, where applicable, for related capacity-building to support this engagement
- Key indicators of stakeholder engagement during activity implementation, and steps that will be taken to monitor and report on progress and issues that arise

5.16. Improving Visibility and Brand Image of VVK

There is low awareness about VVKs, not only among the key target groups which could benefit from its extension activities but also among people in institutions (SFD, NGOs working in the region on forestry etc.) who have not been directly involved in its activities. Rarely does one find a signboard, even at the site where VVK is located (VVK, Manali being one of the exceptions). Recognition and visibility of the VVKs should be improved. A common identity of VVKs could be created with a common name and common signage, which should be prominently displayed at various suitable spots. Ideally, the VVK should have its website and social media presence. More suggestions are provided under the guidelines in Chapter 6.

5.17. ICFRE's Task Force/ Committee for VVK

It is recommended that ICFRE should appoint a multi-stakeholder task force or committee to go into the details of various aspects of the design and system of the 'modified VVK' system proposed here and described further under the guidelines. The mandate of the committee could include, among other things:

- Review the proposed guidelines to bring them in line with the administrative procedures and processes of the ICFRE
- Suggest where new administrative procedures are needed
- Develop formats for application by interested agencies to become host institutions; templates of the agreements with government and non-government bodies; five year and annual plan; progress reporting etc.
- Suggest kind of national, state and regional level committees could be created for periodic review of the VVK
- Assess the feasibility of ideas related to funding, VVK establishment, functioning and management, monitoring etc.
- Assess the capacity of the Extension Division of the institutes and suggest areas of improvement for effectively managing the VVK programme

06

PROPOSED STRATEGIES AND GUIDELINES FOR MODIFIED VVK SYSTEM

This Chapter presents the strategy and guidelines for implementing the suggestions and recommendations provided in Chapter 5 to develop the enabling conditions to develop a robust and effective system for frontline extension and capacity building in the form of VVKs. It is recommended that these proposed strategies and guidelines are carefully analysed for their feasibility and implication, through a special committee appointed by ICFRE for the purpose.

Introduction to the Guidelines

Given the need for conservation, increasing natural forest areas are being excluded from the production system, thereby pushing the need to expand the forestry related production to non-forest areas. Enhanced production and productivity of forest products to cater to the raw material requirement of forest-based industries, including supporting tree planting in non-forest areas as a viable tool for securing and strengthening livelihoods are assuming the highest priority for economic as well as ecological reasons. Robust front-line research and its extension could play a significant role in facilitating the achievement of these objectives.

ICFRE is at the forefront of research contributing to the development and strengthening of forestry, sustainable forest management and forest/ tree-based livelihoods in the country through quality research in forestry and allied sectors. VVK or Forest Science Centre (FSC) was conceptualized by ICFRE to address issues related to technology dissemination in forestry and allied sectors. Given the mandate of the SFD in the country on development and management of forests, the VVKs were started in partnership with SFDs, as a grassroots level programme. There is a strong case to strengthen the extension system at ICFRE in general and FLE through VVKs in particular, to improve forest/forestry-based livelihood by enhancing the income through higher productivity, improved sustainability and enhanced efficiency in the forestry value chain.

Drawing upon the learning acquired through the study, discussion with stakeholders, suggestions from experts and considering best practices for front-line extension adopted under the KVK system for the agriculture sector, certain guidelines are proposed for the establishment and management of VVKs. It is recommended that these guidelines be finalized after discussion with relevant stakeholders. The guidelines are based on the following considerations and principles:

- VVK would be the primary platform of ICFRE for front-line grassroots level forestry technology extension. Further, all the extension and capacity-building activities aimed at the target group in a defined operational area by ICFRE would be converged with the VVK.
- A cluster of 2 to 4 districts would be considered the operational area of VVK. ICFRE would aim to establish VVKs to cover all the 'high potential districts' from the point of view of forestry, agro-forestry, farm forestry and forest-based livelihoods and enterprises for the next 10 years.
- The VVK will impart experiential learning through practical training directly to the target group as well as through extension agents employed with organizations working on the development of forestry and forest-based livelihoods.
- Each VVK will tailor its own syllabus and programme customized to the felt needs, natural resources and the potential for forestry and agro-forestry development in that particular area.

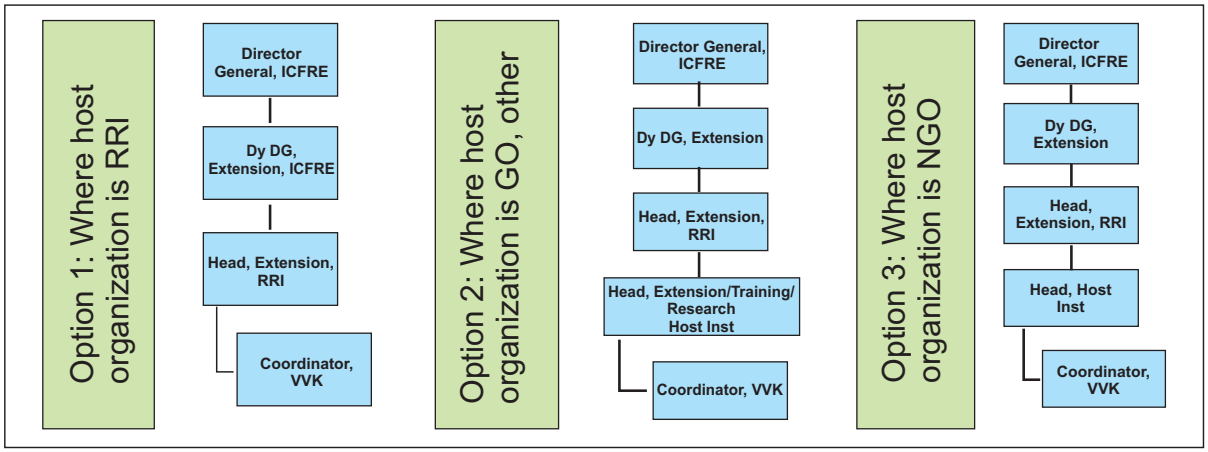
The following guidelines are suggested based on best practices for FLE, in sync with the Vision articulated by ICFRE in its Vision 2030 document as well as the proposed strategy for the extension provided in its Extension Strategy document.

1. Institutional Set-up for VVK
2. Mandate and Domain of activities for VVKs
3. Establishment of VVKs
4. Human Resources for VVK
5. Physical Infrastructure for VVK
6. Planning and Implementation of Activities by VVK
7. Monitoring, Reporting and Evaluation of VVK
8. Convergence and Linkage with KVKs, SFDs and others
9. Funding of VVKs and Financial Management
10. Visibility and Awareness of VVKs

1. Institutional Set-up for VVK

The VVKs would operate as semi-autonomous institutions under the ICFRE umbrella, functioning under the direct management of host organizations identified by ICFRE through a defined process under the supervision of the RRIs. Within RRIs, the Extension Division would be vested with the overall responsibility for supervision of the VVK system in the region.

The institutional structure would differ depending upon the type of host institution for VVKs. There are three options– 1) ICFRE-RRI as host; 2) Government Organization as host and 3) NGO as host - are indicated in the following diagrams:



In the case of the Government Departments such as the Forest Department or Agriculture Department, the head of the wing/unit dealing with training or research would be considered as the head of host organization. In the case of other government institutions, such as an Agriculture university, the head/ coordinator of extension/ agroforestry unit could be considered as the head of the host institution.

The VVKs would be managed according to the policies of the host organization, except in those aspects for which ICFRE formulates and recommends a different policy or procedure for better functioning and management of VVKs.

The host institution would be free to register the VVK as a Society under the Societies Registration Act 1860 for it to function as a separate entity. However, in such cases, the Memorandum and Articles of Association for the Society would mirror the MoU and Agreement signed with ICFRE for VVK. Also, the Board of the Society would have representation from the concerned RRI. Decisions, which are not within the mandate of the VVK or are in conflict with the agreed policies for management of the VVK would not be allowed, except without prior approval of ICFRE.

2. Proposed Vision, Mandate and Domain of Activities for VVK

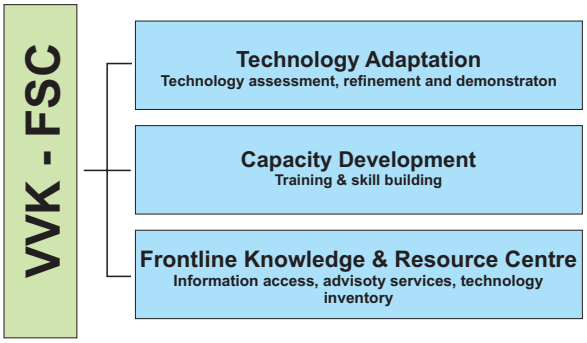
Keeping in view the importance of effective technology dissemination and the changing forestry scenario, the following Vision, Mission and Mandate of VVK are proposed:

Vision: Science and technology-led growth leading to enhanced productivity, ensured income and sustainability of forestry and forest-based livelihoods.

Mission: Growth of forestry and allied sectors focusing on needs of farmers, tree growers and forest-dependent communities through application of appropriate technologies in specific agro-ecosystem perspective.

Mandate: Technology assessment and demonstration for its wider application and capacity building of farmers, tree growers and forest-dependent people on forestry, agro-forestry, forest-based enterprises and allied activities.

VVK would be designed to have expertise in three areas (a) technology assessment, refinement and demonstration to evolve location and site-specific, need-based and viable technologies, (b) training and capacity development of farmers, rural youth, extension functionaries, and other stakeholders, and (c) serve as a knowledge and resource center.



In order to implement the Mandate effectively through the creation of awareness about improved forestry technologies, the following activities would be defined and undertaken by each VVK:

1. Frontline demonstration of various forestry, agro-forestry and allied technologies developed to showcase suitability and benefits of technologies to the target group.
2. Capacity development of farmers, tree-growers, forest-dependent people and extension personnel to update their knowledge and skills in forestry and agroforestry technologies and enterprises.
3. On-farm testing of technologies to assess the suitability of technologies
4. Work as Knowledge and Resource Centre for improving overall forest-based economy in the operational area.
5. Conduct FLE programmes and provide advisories for forestry, agro-forestry, forest-based enterprises and related activities using ICT and other media.
6. Produce quality technology products (seeds, planting materials, bio- agents, etc.) and facilitate its outreach to farmers.
7. Identify and document selected farm level farmer-led innovations and converge with ongoing schemes and programmes within the mandate of VVK.

2.1. Domain of VVK Activities

a) Data collection & documentation

- Develop District profile based on secondary data related to forestry, tree farming, agro-forestry and community-based management of forests and should have information on forest-based enterprises, socio-economic profile of farmers, nature and extent of forest dependence, species composition in the forest, agro-forestry species etc.
- VVK should adopt a cluster approach wherein 4-5 potential villages for agroforestry, farm forestry, forest-based value chain development may be selected. More than one such cluster could be selected for extension and capacity-building activities for a period of three to five years at a time.
- Baseline data of the cluster villages should be collected using sample survey and PRA with a focus on aspects (problems and opportunities) related to forestry and allied sectors and develop a plan for forestry and related activities. The baseline would be used to review progress and assess impact.
- VVK would document significant achievements in the form of case studies/success stories. It would also document innovations at the farm or village level by farmers and producer groups related to forestry, agro-forestry, processing of forest products etc.

b) Need assessment, prioritization and planning

- Assess district-specific needs related to forestry, agro-forestry and forest management of JFM forests by identifying and prioritizing problems based on criteria such as extent of the problem, its impact, and frequency of occurrence.
- Undertake analysis of the constraints in consultation with stakeholders including SFD, farmers, JFMCs, Producer Groups, NGOs working on the issue etc., and plan for appropriate interventions.
- Address at least one most relevant issue of the area by using the technology developed by the RRIs.

c) Technological interventions

- Prepare a work plan for a cluster of villages with well-defined output/deliverables. It should aim at tackling prioritized problem by selecting suitable technologies, on-farm tests, frontline demonstrations, capacity development, frontline extension programmes, supply of technology -related inputs etc.
- Identify, document and validate important innovations in the area.
- VVK would carry out need-based capacity development activities through specific modules and practical training and experiential learning

and bring out training manuals in the local language.

- Strengthen the grassroots level extension programme by developing a training of trainer's programme for extension agents from SFD, NGOs etc.
- Focus on all activities related to the forest value chain from the perspective of rural communities.
- Organize skill and entrepreneurship training for rural youth/women groups/progressive farmers for higher production of technological products as well as forest-based enterprises and help them get linked with the market for such products.

d) Development of demonstration nurseries, plots and units

- Develop a model nursery for tree species suitable for agro-forestry and farm forestry in the region/district
- Establish permanent technology demonstration units, including tree cultivation and agro-forestry plots, forest product (NTFP, MAP) processing units etc., to showcase and train the farmers and producer groups.
- Produce technological inputs and products like seeds, planting materials, bio-products etc., using Revolving Fund to ensure their availability to farmers and other stakeholders. The products would be sold to farmers-that would also qualify as a test of its acceptability. The proceeds of the sale would be deposited in the Revolving Fund.

e) Capacity building and outreach activities

- Plan and execute programmes on capacity development focussed on skill development of target group.
- Organize training programmes for other stakeholders including extension agents (field staff) of SFD, NGOs etc.
- Organize programmes for KVKs on agro-forestry and related issues. It should maintain a close working relationship and develop a mechanism for regular interaction and exchange of ideas with the KVK in the district.
- Design and implement innovative extension strategies for individual, group and mass awareness about technology related to prioritized problems, using ICT tools and techniques. It would also develop leaflets and other user-friendly extension material focusing on the capabilities of the target group in the local language.

3. Establishment of VVKs

3.1 Potential Districts for VVK

The initial target would be to establish one VVK in each "potential" district from the point of view of agro-forestry, farm forestry, tree cultivation outside forest area, Joint Forest Management, Community Forest Management and dependence of local people on the forest for livelihoods.

The RRIs already have a body of research on the potential of agro-forestry as well as cultivation of some NTFP species, including MAPs in the regions under their mandate. They could score and rank the districts within their area of operation according to the scope for agro-forestry/farm forestry/ tree cultivation and extent of forest dependence. A list of criteria for ranking of districts is suggested below. This may be revised and updated by ICFRE/ RRIs, as required.

Criteria for identifying high potential districts

- Scope for agro-forestry/farm forestry in the district – high, medium, low
- Extent of the forest dependency of local community for their livelihood– high, medium, low
- Extent of the area covered under forest in the district & number of forest-fringe villages (within 2 km of the forest boundary) in the district

- Extent of the prevalence of JFM or CFM in the district – special consideration should be provided to areas where large areas of forest are under community control
- Extent of implementation of the Forest Rights Act (FRA) in the district – No. of villages where farmers have been allocated lease on forest land

At the time of application from interested organizations, their understanding of the need and potential for a VVK in the district may also be assessed by ICFRE before approving the establishment of VVK in the district.

3.2. Coverage of Districts for VVK

An incremental approach should be adopted for coverage of districts/regions for VVKs, by first focusing on high-potential districts. As far as possible, in the first phase (first ten years), the VVKs should be geographically spread out to cover all the agroecological regions in the State.

It is estimated that by following this strategy, about 120 to 210 VVKs could be established over the next 10 years, depending upon the ability of the RRIs to manage. This ability would be largely dependent on the availability of funds for employing more technical staff in the Extension Division as well as financially supporting the newly established VVKs.

The following table provides the number of VVKs that could be established under two different scenarios:

Scenario One: 1 new VVK get established per RRI per year Scenario **Two:** 2 new VVKs get established per RRI per year.

Year	Old / Existing VVKs		New VVKs Created		Total number of VVKs	
	Scenario 1	*Scenario 2*	*Scenario 1*	*Scenario 2*	*Scenario 1*	*Scenario 2*
2022	29	29	9	18	38	47
2023	38	47	9	18	47	65
2024	47	65	9	18	56	83
2025	56	83	9	18	65	101
2026	65	101	9	18	74	119
2027	74	119	9	18	83	137
2028	83	137	9	18	92	155
2029	92	155	9	18	101	173
2030	101	173	9	18	110	191
2031	110	191	9	18	119	208

It is also assumed that given the amount of work required and time involved in finalizing systems and procedures for establishing and supporting new VVKs under new guidelines, getting the required approvals and arranging the funding, the process of establishing new VVKs with new institutional setup and arrangements would get started from the year 2022.

3.3. Eligible Institutions for Hosting VVK

ICFRE could prepare a list of potential eligible host institutions for VVK. This would, among others, include:

1) Regional Research Institutes & Centres of ICFRE (RRI);
2) State Departments, particularly SFD and State Agriculture Department (particularly in high agro-forestry scope districts);
3) Regional Research Institutes of ICAR in districts with high potential for agroforestry;

4) Universities and Colleges with faculty of forestry or agro-forestry;
5) NGOs working on conservation or development of forest and forestry, livelihoods strengthening in forest-fringe villages through promotion of forest-based enterprises etc.;
6) Institutions and NGOs hosting KVKs;
7) Forest-Based Industries and Corporations, and
8) Other institutions deemed to be eligible by ICFRE.

ICFRE may invite well-publicized (in local and national media) expressions of interest (EoI) for the establishment of VVK specifying the eligibility conditions, which *inter alia*, would include:

1) Minimum five hectares of land suitable for establishing nursery and demo plots. The proposed land should be provided free of cost and fulfil the following requirements:
   a. The location of the proposed site should be easily accessible.
   b. The land should be contiguous and free from encumbrances, litigation and attachments.
   c. The ownership of land should be in the name of the organization.
   d. The location should have educational, medical and other civic amenities in the vicinity.
   e. The land should be cultivable and should have easy access to electricity and water for irrigation.
2) Willingness of the host organization to share its resources for growth and effective functioning of the VVK.
3) Willingness and commitment to run the VVK strictly by the objectives of ICFRE.
4) Nature and extent of involvement in promoting forestry, agro-forestry and related activities in the district;
5) Other conditions may be considered necessary by ICFRE.

Host organizations should have a feeling of ownership for the VVKs and devote their resources to their development and visibility. The host organization should commit to direct involvement of their senior leadership in implementation and review of VVK activities and supplementing the infrastructure and resources through additional funds on their own.

3.4. Selection of Host Institution & Sanctioning of New VVK

Institutions shortlisted as eligible for serving as the host institution for VVK should be invited to submit proposals for establishing VVK in the district. ICFRE may decide to impose an application fee along with the proposal, the amount for which would be decided by ICFRE.

ICFRE may propose a template for submission of the application and develop criteria for their objective assessment. Following information areas should be covered:

- Information on activities and engagement of the organization related to forestry, agro-forestry, agriculture, farm forestry, NRM, forest conservation, development of forest-based livelihoods and enterprises etc., in the district
- Details experience of the host institution in relation to farmers' training on topics of relevance to VVK.
- Facilities available with the institutions to support the training programmes of the VVK – physical facilities, academic facilities, vehicles, equipment etc., including facilities which can be made available by the host institution exclusively for the proposed VVK free of charge – land, buildings, equipment, vehicles, staff etc.
- Scientific and technical staff available in the host institution to support the training programmes including deputed full-time and part-time to the VVK
- Location of host institute and site for proposed VVK and its distance from the nearest KVK indicated on the district map
- Organizational understanding on the need for VVK in the district/region including scope of agro-forestry/farm forestry/forest-based enterprise in the district and main issues related to it
- Status of forest and JFM/CFM in the district and how the VVK could help towards sustainable management of forests

- Understanding of specific training needs of farmers and forest dependent people
- Specific support and facilities required by the organization in terms of staff, equipment, buildings, vehicle etc., from ICFRE.
- Proposed budget for VVK – first year and over five years.

Application submitted by Government Institutions should be accompanied by the following documents:

a) Executive order from the competent authority for allocation of land wherein the organizational ownership and possession of the proposed land duly supported by site map, survey numbers and clear title.

b) Alternatively, consent from the competent authority of the State Government for transfer of proposed land supported by sketch map and survey numbers

c) Details of the infrastructure, basic amenities already existing at the location proposed for VVK, including buildings which would be devoted for exclusive use of the VVK sanctioned by appropriate authority

d) Details of human resources to be devoted for VVK on a full or part-time basis

In the case of NGOs and private institutions, the organization should have a minimum of five years standing and relevant experience of working in the field of forestry/agriculture/rural livelihood development in forest-fringe villages with a proven track record. Application submitted by NGO should be accompanied by the following documents:

a) Certificate from the District Revenue Authority showing that the proposed land is owned or held by the Government in the name of the organization and the organization should have clear ownership/marketable title to the land/ property concerned.

b) Land records including registered conveyance/ sale deed and other documents (in case the documents are in regional language, a translated copy in English, duly attested by a Gazetted Officer/Notary).

c) An undertaking from the organization expressing willingness to mortgage the land in favour of ICFRE and execute an Indemnity Bond, in case a decision is taken by the competent authority in ICFRE to sanction the VVK to the said organization.

d) Valid registration certificate of organization

e) Audited Financial Statement of the organization for last three years

f) Latest Annual Report of the organization

g) Note on activities of organization in the concerned district for a minimum period of five years in the area of forest management, forestry, agro-forestry, agriculture and allied sectors.

h) Note on organization's understanding of the potential for a VVK in the district.

3.5. Process of Sanction of VVKs

- Applications and proposals should be first scrutinized by the concerned RRI which is responsible for the State/region in which the district/site for VVK would be located, according to the specified criteria
- After scrutiny, the application(s) would be forwarded to the Selection Committee established by ICFRE for the purpose of further consideration. The Selection Committee would comprise three members nominated by ICFRE would be headed by the Head of Extension Division of ICFRE and would include a member of the concerned RRI. It would be authorized to assess the applications and recommend a sanction to the Head of ICFRE.
- The Selection Committee would visit the concerned district and organization to assess their suitability for the establishment of VVK as well as confirm or clarify any issues. They may request the concerned organization to make a presentation before the Selection Committee.
- If considered suitable, a MoU will be executed with the concerned Government Organization as a host institution. In case of NGOs, an Indemnity Bond, duly executed by the President/Chairperson/Secretary of the

organization, surety and two witnesses shall be required along with MoU.

- In the case of NGOs or other non-government institutions, the land at the selected site shall be mortgaged in favour of ICFRE before sanctioning of VVK and the cost involved for registration of mortgage deed shall be shared equally between the concerned host organization and ICFRE.
- After fulfilment of all essential formalities and submission of necessary documents, official order conveying sanction of the competent authority regarding establishment of new VVK would be issued.
- Along with the sanction order, a copy of the MoU/Agreement, the staffing pattern, initial budget allocation, terms and conditions for grants would also be conveyed.
- The MoU/Agreement would initially be for a period of minimum of ten (10) years and would specify the role and responsibilities of ICFRE and Host Institution.
- The MoU should contain a provision for extension with mutual agreement of ICFRE and host institution. The process for MoU extension should be started at least one year before the expiry of the MoU. ICFRE or the host institution would formally communicate to the other party about MoU renewal. ICFRE would formally decide on the renewal based on its assessment of the performance of the host institution as well as the concerned VVK.

3.6. Division of Roles and Responsibilities

Roles & Responsibilities of ICFRE & RRIs	Roles & Responsibilities of Host Institution
• Provide funds for basic minimum full-time human resource • Provide funds for development and expansion of infrastructure • Provide funds for extension and capacity building activities • Provide technical backstopping support for technologies being tested or promoted by ICFRE • Sharing of relevant technologies • Providing extension literature for technologies • Capacity building, training and exposure of VVK staff • Supervision and monitoring of VVKs • Suggest policies and procedures for the effective functioning of VVKs	• Provide land for exclusive use by VVK • Provide existing infrastructure including buildings, training facilities, equipment, communication facilities on an exclusive or sharing basis • Provide electricity and water supplies. • Provide services of administrative staff, additional technical staff (on a full time, part time or ad-hoc basis) • Manage the VVK according to policies, procedures and guidelines established by ICFRE • Ensure proper use of funds received from ICFRE for VVK through a separate bank account • Timely submission of reports in prescribed formats to ICFRE • Generate additional funds for VVKs

3.7. Closure of VVK

- VVK would be responsible for doing mandated work and thereby significantly contribute towards development of the forestry, agro-forestry and related aspects in the district/ operational area. In the event of unsatisfactory progress of work of any VVK, as assessed by the ICFRE from time to time, the ICFRE would have the right to terminate/close such VVK under any host organization by giving six months advance notice for the same. In such an event, ICFRE will not have any liability whatsoever.

- In the event of closure of VVK, the immovable as well as movable properties constructed/ acquired with the assistance of ICFRE shall remain the property of ICFRE. In case the host organization is unable to hand over such property due to whatsoever reasons, ICFRE shall be entitled to such fair and reasonable compensation as per the valuation done by CPWD or any other agency nominated/ selected by the ICFRE. The property or assets created or lent by the host organization for VVK would revert to the host organization.
- The host organization would keep a record of such movable and immovable properties acquired or created as part of VVK and share the same with ICFRE on annual basis.

4. Human Resources for VVK

Extension aimed at development is not possible without scientific human resource. Specialized competencies in the VVK staff are required to effectively address the issues and harness the distinct opportunities related to forestry in the district. Fulltime dedicated and competent human resources could be recruited from RRIs, SFD, or other host institutions specifically working for VVKs to plan, implement and manage the front-line extension and capacity building activities are critical for its effectiveness. The full-time personnel would be supported by part-time staff from the host institution specifically for administrative support. In the beginning, given the scope of activities to be taken up by VVKs, the need for full-time administrative support staff for VVK is not foreseen. This may change over time as the VVK expands its resources and activities.

4.1. Staffing Pattern

Each VVK should have minimum of three full-time persons working for it, fully funded by ICFRE.

Apart from the full-time staff, the host organization would engage other technical, managerial and administrative and financial support staff, which would be partially recompensed by ICFRE, to support the functioning of the VVK. In lieu of their part-time engagement, ICFRE would pay a fixed amount, which would not be more than 25% of the total salary expense incurred on account of the support staff.

Proposed Full-time Staff of VVK fully funded by ICFRE:

Designation / Position	Nature of engagement & role	Proposed qualifications
VVK Coordinator cum Sr. Scientist	Management and coordination of the VVK, including planning and implementation of activities, fund mobilization, documentation and reporting, networking etc.	Doctoral degree in the relevant subject including relevant basic sciences. Scientist C or above with at least five years of experience in participatory research, extension, training preferably in relevant areas for VVK
Subject Matter Specialist/ Scientist/ Technical Officer	Support VVK Coordinator in planning and implementation of VVK activities including frontline demonstration, demo plots, capacity building, content development for extension material etc., as well as VVK management; resource person for training programmes	Minimum Master's degree or equivalent in the relevant discipline. Minimum three years' experience in the technologies that are identified for testing or dissemination in the region / district
Technical Staff / Nursery Manager	Responsible for development, maintenance and management of demo plots including model nursery; production of technological products; Maintenance of records	Minimum graduate in science with three to five years of experience in plantations / nurseries

The VVK Coordinator cum Senior Scientist and the SMS/Scientist should be from relevant disciplines such as:

- Forestry Extension
- Participatory research management
- Agro-forestry
- Tree Improvement
- Silviculture
- Forest Resource Management
- Bio-prospecting (especially NTFP/MAP)
- Forest based enterprise
- Forest Protection etc.

Apart from the Host institution/VVK would be encouraged to engage part-time/adhoc technical staff/resource persons. A media and communication professional could be engaged as a part-time resource person.

4.2. Responsibilities of VVK Staff

The VVK technical staff would be involved in the following specific activities of VVK:

- Creation of district profile from the point of view of development of forestry, agroforestry, forest-based livelihoods building upon the secondary data
- Identify, adopt and build linkages with farmers and villagers in at least one cluster of 3 to 5 villages
- Create a baseline for the situation related to forestry, agro-forestry, forest-based livelihood in the identified cluster of villages using PRA and sample survey
- Facilitate participatory assessment to identify and prioritize constraints and opportunities related to agro-forestry, sustainable forest management and forest-based enterprises, working closely with community institutions (JFMC, SFC, SHG etc.) and field staff of SFD
- Identify scope for application of technologies and best practices developed by ICFRE-RRIs and other institutions to address constraints and improve production, productivity, ensured income and sustainability in forest-based or agro-forestry production systems
- Each Scientist/SMS in VVK should address at least one relevant issue or opportunity related to agro-forestry, farm forestry, community forestry or forest-based livelihood of the area.
- Prepare work plan for a cluster of villages with well-defined outputs/deliverables, aimed at tackling prioritized problem through selecting suitable technologies, on-farm tests, frontline demonstrations, capacity development, FLE programmes, etc.
- Identify, document and validate important farmer-led or community-based innovations.
- Conduct need-based capacity development related activities through specific technology modules and methods/techniques and bring out training manuals and materials in the local language.
- Develop technology agents through vocational development programmes.
- Organize skill and entrepreneurship training to rural youth/farm women/progressive farmers for higher production of technological products.
- Emphasize on development of the forest value-chain concept.
- Help develop quality nurseries and model agro-forestry plantations in the district in collaboration with SFD and progressive farmers.
- Establish permanent Technology Demonstration Units for production of technological products and processing of MAP/NTFPs.
- Produce technological inputs and products like seeds/seedlings/bio-products etc., using Revolving Fund to ensure their availability to farmers and other stakeholders.
- Plan and execute appropriate off-campus programmes on capacity development.
- Design and implement innovative extension strategies for individual, group and mass awareness about technology related to prioritized problems. Use ICT tools and techniques like e-extension, web-based technology content including modules and capsules for knowledge empowerment and technology dissemination.

- Document significant achievements in the form of case studies/success stories as per the merits of the technology. At least one success story/case study per year be showcased and submitted to ICFRE-RRI.
- Prepare annual activity plan and budget estimate and submit those timely for approval.
- Network with other central and state government programmes/schemes related to forestry and allied sectors to augment resources.
- Build a working relationship with KVK in the district and jointly organize programmes and activities.

4.3. Guidelines for Recruitment of Staff and Personnel Policy

Following guidelines related to staff are proposed:

- The host organization should follow the ICFRE norms and guidelines for the recruitment of full-time VVK staff.
- As the full-time staff of VVKs would be fully funded by the ICFRE, the host organization shall get an undertaking from the respective State Governments regarding full-time deputation of personnel or recruitment for all the sanctioned VVK posts, if required.
- In the case of VVKs functioning under the NGO, it should widely advertise the posts in leading local newspapers, employment websites, and details should be posted on websites of host organization and VVK.
- The academic qualifications and experience for the posts should not be less than what is prescribed by ICFRE.
- The promotional policy including the pay and eligibility criteria should be as applicable to similar posts in ICFRE.
- The Recruitment/Selection Committee for the recruitment of technical staff under NGO shall be constituted by the concerned NGO. The Committee shall comprise of Head of the Host Organization as Chairperson, Head of Extension Division of the concerned RRI, one Expert in the rank of Professor and above from RRI to be nominated by the Head of RRI, and one official from the SFD, not below the rank Conservator of Forest as Members.
- VVKs should be allowed to hire retired personnel on contract basis against vacant posts for a period of six months or till the recruitment is made, whichever is earlier.
- ICFRE would determine the pay structure for different full-time positions in the VVK.
  - The VVK staff should get proper incentives and recognition, including promotion benefits. In Government organizations, it would be as per the government policy subject to the condition that the upper ceiling of such promotional policy including the pay and eligibility criteria will be applicable to similar posts in ICFRE.
  - If any NGO running a VVK does not have any duly approved promotion policy, the policy for career progression as implemented in ICFRE would be adopted.
  - VVK full-time staff should not be transferred before a period of five years is completed and concurrence of ICFRE would be essential before making any transfers.
  - Payment of retirement benefits in the form of Gratuity and Contributory Provident Fund (CPF) should be admissible.
  - Leave encashment and medical allowance to VVK staff need to be given as per provisions of the host organization as these are covered under the Head, 'Pay and Allowances'.
  - The superannuation age of VVK staff shall be as per the rules of the host organization.
  - The benefit of study leave may be extended to the employees of a VVK under organizations other than NGOs as per the rules of the host organization.
  - The host organization, in collaboration with ICFRE and RRI should create scope for capacity development of VVK staff.

5. Infrastructural facilities for VVK

ICFRE would provide financial support for creation or improvement of some basic infrastructure facilities for the VVK, based on the proposals of the host institutions. It is envisaged that most of the host institutions would have some existing basic infrastructure, which they would provide for the exclusive use of the VVK in addition to need-based access to other infrastructures and facilities available with them free of cost.

The proposed infrastructures for VVKs include:

Immovable Infrastructure	Movable Infrastructure
• Land for demo plots and model nursery • Office building • Staff quarters • Training hall • Trainees hostel & mess • Irrigation facilities and drainage system • Work shed • Storage godown • Electrical connection	• Furniture and fixtures in the office, training hall, hostel & mess. • State-of-the-art communication facilities and internet connection • Library • Laboratory equipment, office equipment • Farm/nursery implements, machinery and tools • Small weather station • Vehicles (one four-wheeler and one two-wheeler)

5.1. Utilization of Infrastructure

- Infrastructural facilities created at VVK should be put to appropriate use. Logbook and asset register be maintained for each of the movable and immovable properties.
- A list of infrastructures created with ICFRE support should be shared annually with ICFRE along with the annual report of VVK.
- The revenue generated by the VVK should be allowed to be utilized for the development of VVK facilities, and be properly accounted for.
- The building plan and estimates have to be submitted to Head Extension, RRI who will, in turn, get it vetted from ICFRE before taking up the construction work. The construction should be undertaken on the allocated/ mortgaged land adhering to the vetted plan and estimate as approved by the ICFRE.

6. Planning and Implementation of Activities by VVK

Assessment, refinement and demonstration of technology/products, and capacity building of different stakeholders to facilitate forestry growth in the district are the mandate of the VVK. To achieve this, VVK will carry out on-farm testing, frontline demonstrations and training. VVK provides a platform for RRIs to showcase forestry technologies at the grassroots level and will function as resource and knowledge center and provide technology and the quality products like seeds, planting materials, literature along with training VVK will work in clusters of 4-5 villages for testing and demonstration of technologies. However, other activities like training, awareness, etc., would be conducted keeping the entire district as its area of operation.

The detailed operational guidelines are provided below for effective planning, implementation and monitoring of these activities.

The VVK would prepare a five-year perspective plan based on the needs identified for the development of agro-forestry, farm-forestry, forest management and forest-based livelihoods in the district in general and the cluster of adopted villages, in particular.

The perspective plan would include the following components:

- Technology Assessment through on-farm Trials
- Front-line Demonstration
- Training & Capacity Building

- Extension Activities
- Production of quality technological products including quality seedlings in model nurseries and demo units of forest-based enterprises
- Infrastructure Development

Based on the perspective plan, the VVK would prepare annual plan and budget estimates and submit them to ICFRE through host organization. The annual plan and budgets should be realistic and submitted timely latest by September/October for the next financial year.

6.1. Developing District Profile

Each VVK should maintain a database on the district profile viz., blocks/ villages, demography including farmers (small, marginal and large), nature of forest dependence, farming systems including agro-forestry and farm forestry, species composition of forest, livestock population, weather data, distribution of land, area under major crops, production and productivity trends of crops, home-scale enterprises and socio-economic profile. Besides, details of inputs, marketing, processing, extension service providers etc., may also be maintained in the database.

6.2. Selection of Cluster Villages

The VVK should work in a cluster of 4-5 villages.

In districts with high natural forest cover, forest-fringe villages should be prioritized. A three-year work plan should be prepared after which another cluster of villages should be adopted for a 3-year work cycle.

6.3. Baseline Data of the Cluster Villages (Collection, Analysis and Documentation)

The information and data related to forestry and allied activities of the villages would be collected using participatory tools and techniques, secondary data and a sample household survey for comparison in subsequent years for assessing the impact of VVK interventions.

6.4. Identifying Interventions and Action Planning

- Partnering with community institutions and groups (JFMC, Van Panchayat, SHGs etc.)
- Identifying and ranking constraints and opportunities
- Causal analysis of constraints and problems
- Action plan to tackle the prioritized problem through on-farm trials, frontline demonstrations, training, extension programmes and supply of technological inputs etc.
- Facilitate convergence with other ongoing programmes

6.5. Technology Assessment and Refinement

On-farm trial (OFT) is the tool for technology assessment and refinement to address the problems faced by a large number of farmers. This activity is mainly focused on tested and developed technologies that might help to solve the most pressing and widely spread problems of farmers in a defined area from farming system perspective. OFTs are normally planned, managed and evaluated by farmers themselves with a facilitative role of VVK scientists through active participation and management.

Choice of technological options must be based on various factors prevailing in the farmer's situation to increase the production or productivity. Emphasis must be given to test one technology at a time to

convince farmers on the utility of technological options to solve the problem and to ensure adoption of the technology by the farming community. All the essential/required observations have to be recorded in each and every trial. The collected data are to be processed, analysed and documented for drawing recommendations as well as for reference. Successful technological options must be up-scaled through frontline demonstrations in the same location as well as in other parts of the district.

Points to be considered in conducting OFTs

- Scientists from RRIs should be closely involved as technical backstopping for the OFT.
- OFTs may be replicated under different farming situations in various micro locations of the district with suitable numbers of treatments.
- Farmers' perspectives and knowledge should be incorporated in the OFT.
- Results should be properly recorded in prescribed format and be jointly analysed with the farmer.
- The results and the variations from the research station recommendations should be communicated back to the research system.

6.6. Frontline Demonstrations

Frontline demonstrations (FLD) are created to show the performance of new varieties/ species/ proven technologies on farmers' fields under real farm situations for increasing productivity and returns.

Process of conducting demonstration

- Identified problems should be discussed in VVK Advisory Committee/RRI level workshops for selecting suitable technologies for demonstration.
- Source of identified technology for demonstration should be ascertained
- Location of demonstration (District, block, village) should be clearly stated
- Planning and layout (situation analysis, constraint analysis, target farmers, characteristics of technology, timely availability of critical inputs)
- Implementation (year, season, arrangement of critical inputs, group meetings, training on technical know-how and do-how, field visits during critical stage of operations, field days and mass media coverage)
- Results (Data analysis and performance of technology)
- Feedback (Perception of farmers and extension personnel on the performance of technology)
- Documentation and reporting

6.7. Training

Training of farmers, producer groups, rural youth and women and extension workers would be a regular, important activity of the VVK. It is proposed that a minimum of five training programmes be conducted by each VVK per year, covering minimum of 25 training days and 100 trainees. The training should focus on skill development and employ experiential learning tools, including practical training. Minimum one technology or best practice may be covered for training every year.

The aim of the training would be to provide an opportunity to the target group to acquire necessary technical know-how and technical do-how about new technologies.

Specific training would be planned every year for extension personnel and field staff of relevant government departments (SFD, Agriculture Department) to expose and acquire knowledge, skills and competency on latest technological developments in their subject matter as well as extension techniques and build their attitude for enabling them to perform better. The field functionaries of NGOs working in forestry and allied sectors should be treated as extension personnel for training purposes.

At least one vocational training programme could be organized every year of relatively long duration training of 15 to 45 days for rural youth, progressive farmers, and rural women to hone their knowledge and skills to develop and manage forest-based small-scale/ micro enterprise.

For making the training effective, the programme must be tailored so as to meet the needs and requirements of the personnel engaged or likely to be engaged in the immediate future on a particular task or vocation.

6.7.1. Assessment of Effectiveness of Training

Training effectiveness depends not only on what happens during training but also on what happens before the actual training formally ended. Evaluation should, therefore, be done of both the pre-training and post-training work.

For each of the training organized by VVK, a report should be prepared which would provide details on learning impact and course evaluation by participants and these should be submitted to the RRIs and funding agencies.

A database of participants would be maintained by the VVK and would be used to assess the impact of the training on each technology from time to time.

6.8. Extension Programmes

Appropriate extension strategies would be designed and implemented by VVK for individual, group and mass awareness about technologies and practices that can address identified problems. Some of the methods are as follows:

Individual contact methods	Group contact methods	Mass contact methods
• Individual need analysis • Household visits • Farm / farmer level Advisory	• Community need analysis • Farmer group discussion/ meetings • Method/interactive demonstrations • Seminars • Workshops • Celebration of important events • Visits and advisory for groups including mobile based advisories	• Farmers' Fairs/ *Melas* and Exhibitions • Media utilization (*both print and electronic*) • Extension literature • Technology week • Campaign including social media campaign • ICT for mass contact – Facebook, YouTube, Telegram, Mobile apps

The extension activities would include group meetings in adopted cluster of villages, workshops and seminars, distribution of literature, Farmers/ Tree Growers Mela, events on important days, exposure visits, technology week etc.

6.9. Production of Technological Products

VVK would take up production of quality seedlings and bio-products such as vermicompost, tree boosters, bio-pesticides etc., important and suitable for the district. The seedlings would be produced in the model nurseries and other products in the demo units. Funds available through Revolving Fund mechanism would be used for the purpose. The produce would be sold to farmers at some profit. The produce would be sold to farmers at some profit.

VVK may also promote the production of quality seedlings of popular tree species, NTFP species, through partnership with Departmental or private nurseries. In case of private nurseries, individuals who have participated in the vocational training programme related to nursery should be given priority.

The linkage should be established with KVKs for augmenting and exchanging of technological products.

6.10. VVK as Resource and Knowledge Centre

- Every VVK would have a dynamic website linked to both the websites of the host organization and ICFRE-RRI
- Details of various activities undertaken by the VVKs should be updated at regular intervals. Various reports produced by the VVK should also be uploaded. Technological modules based on the experiences of the VVK may be prepared in detail and placed on the website
- Latest technological updates/ VVK events/ alerts etc., should be sent to the stakeholders through KVK Mobile Advisory, in collaboration with the KVKs. Related arrangements and cost-sharing mechanisms could be developed
- Short video clippings highlighting the technology/best practices may be prepared and posted on VVK website.
- The VVK campus should have demonstration units and a technology cafeteria showcasing technologies, practices and units suitable for the district as models for learning
- VVKs may develop Technology Park comprising tree crop-based and other enterprises
- Development of digital content in the prescribed format by VVKs having e-connectivity
- Uploading of e-databank on addresses, PPT, video, photo gallery by VVKs
- Maintenance and updation of various relevant databases

6.11. Technological Backstopping

Effective and regular technical backstopping from institutions and experts on the technology being promoted should be ensured by the VVK/ host organization. Concerned ICFRE-RRIs would be the main technical backstopping, along with extension wings of other institutions (ICAR-RRI, Agricultural Universities, Research Wink of SFD etc.). Mechanisms and arrangements would be created by ICFRE-RRI to ensure backstopping support through periodical visits of technical experts, capacity development activities by ICFRE-RRIs, publication and updating of district or region-specific technology inventory, and facilitating VVKs interface and convergence with different stakeholders in the district/ region.

6.12. Reports and Publications by VVK

- One publication on the outcome of technology assessment and refinement and demonstration from each VVK in a year
- Minimum of one research article every two years
- Minimum of two popular articles in a year
- Minimum of two extension leaflets/folders in a year
- Annual Newsletter
- Annual report

7. Guidelines for Coordination, Monitoring, and Evaluation of VVK

The VVK system would need coordination and monitoring at multiple levels – National, Region, State and District for which appropriate institutional arrangements needs to be created.

7.1. National Level

The Deputy Director General (Extension), ICFRE is the head for all extension related activities at the national level and would have the overall responsibility for developing policies and

institutional arrangements for co-ordination, monitoring and implementation of activities by VVKs with the assistance of ADG (Media & Extension) and Scientist/CTO of ICFRE specifically allocated for VVKs. They would work closely with the team in the Extension Division of RRIs in different regions.

Technical Coordination and Monitoring

- Finalize the list of technologies for extension and capacity building in each region and State
- Review quarterly reports submitted by RRIs for tracking the progress in mandated activities and to suggest measures for improvement
- Organize half-yearly and annual review meetings with Head, Extension Division of RRIs for effective review and monitoring of VVK activities
- Compile information on progress vis- a-vis targets and prepare Annual Report on Extension by ICFRE
- Organize the National Conference of VVKs every year with the main aim of having an interface between VVKs and the policymakers, administrators, technocrats, and other stakeholders. A specific theme could be finalized for each year keeping in view the changing scenario of forestry and allied sectors
- Develop arrangements and mechanisms for identification and recognition of best performing VVKs through national/regional level awards to motivate other VVKs to perform better
- ICFRE could constitute Quinquennial Review Teams (QRTs) to review the progress and assess the relevance of ongoing mandated activities of VVKs covering at least 5 representative VVKs from each region
- Review inter-divisional coordination and convergence at the ICFRE-RRI for effective technological backstopping and implementation of national-level thematic programmes through the VVK system
- Suggest improvements for inter-departmental and inter-ministerial coordination and convergence at the national level
- Examine the international exchange programmes for the benefit of VVK system
- Ensure creation and maintenance of a national level database of all VVKs and their activities along with documentation of achievements, best practices, farmer led innovations and innovative extension approaches for meeting the information needs of policymakers, administrators, scientists and other stakeholders.

Administrative

- Periodical review of human resource and infrastructure related issues and provide required administrative support and guidance including policy issues to RRIs.
- Periodical review of MoU/Agreement signed with different host organizations as per the changing policies of ICFRE.
- Provide required administrative support for implementing specific recommendations of Management Committees, Research Advisory Councils, National Conference and QRT
- Conduct evaluation of VVK system through third-party, every five years.

Financial

- Planning, implementation and monitoring of Plan and annual budget with required inputs from RRIs
- Arrange for timely release of funds (BE and RE) and monitor their proper utilization through quarterly expenditure statements
- Half-yearly review of expenditure with the Finance & Accounts Officers of the RRIs for preparation of BE and RE and for reviewing the UC/AUC and to plan for the actual requirement of funds

7.2. Regional Level

The RRI will have the responsibility for coordination, monitoring and implementation of activities by VVKs in each region and may prepare the blueprint for extension related activities at the regional level.

Technical Coordination and Monitoring

- Initiate, plan, coordinate and execute extension research to support and improve the application of technology and its dissemination
- Prepare State-wise database on the profile of forestry situation with thrust areas and issues to be addressed
- Prepare and monitor a need-based Capacity Development Plan for the staff of each VVK
- Guide on development of Annual Action Plan by each VVK keeping in view the district specific needs and thrust areas, national and state policies, and emerging issues in forestry and allied sectors
- Ensure execution of Annual Action plan through effective technical backstopping and field-level monitoring by the Head Extension Wing of SFDs/Agriculture Universities as well as Scientists of the RRI
- Organize Annual Regional Workshop for reviewing the progress report of each VVK in the Region and suggest specific measures for improvement
- Monitor the timely conduct of Scientific Advisory Committee (SAC) meetings and implementation of their recommendations
- Ensure documentation of case studies, success stories and impact assessment of VVK activities

Administrative

- Monitor filling up of all sanctioned positions by the host organizations and ensure that the selected staff work for a minimum period of five years
- Monitor creation, utilization and maintenance of infrastructure facilities so provided
- Periodical verification of land records and asset registers
- Third-party evaluation of VVKs would be taken up by the RRI for assessing the performance of VVKs in the region once in 10 years
- Annual Performance assessment of VVKs

Financial

- Prepare Plan Budget and accordingly Annual BE and RE at Regional level, get approval from the competent authority and release the fund only after obtaining necessary UC/AUC, to respective VVKs through concerned host organization
- Monitor proper utilization of funds, get periodical expenditure statements, examine the statements for errors, if any and take appropriate corrective measures as well as report to ICFRE in the prescribed format
- Ensure timely release of the fund to VVKs by the host organizations

7.2.1. Performance Assessment of VVKs

The performance of the VVKs should be reviewed periodically through reports and personal visits of RRI Scientist/CTO. Keeping in view the various activities of VVK, specific performance indicators covering technical, administrative and financial aspects for rating the VVK performance is provided below. This could be further refined from time to time.

Technical Performance Indicators

- Technology assessment and trials facilitated
- Frontline demonstrations created
- Capacity building/Training of farmers/rural youth & women/extension personnel
- Extension activities undertaken
- Interface with villagers organized
- Production and supply of technological products
- Instructional facilities and demonstration units
- Convergence with government projects/ programmes
- Linkages with other Institutions
- Special innovative programmes
- Capacity development of VVK staff
- Database management and Use of ICT
- Review meetings/technical backstopping
- Documentation, publications and reporting
- Impact observed

Administrative Performance Indicators

- Staff in position
- Additional full-time or part-time staff employed by host organization

- Utilization of infrastructural facilities
- Support from host organization

Financial Performance Indicators

- Fund utilization
- Mobilization of funds from other sources
- Revolving Fund status/revenue generated
- Financial reporting, timely submission of SE/UC

Each indicator should be allocated a maximum score to make the total score 100. Based on the score obtained by the VVKs, they could be graded into different categories and follow-up action could be taken by the host organization, concerned RRI and ICFRE.

Aggregate score	Grade	Proposed Follow-up
More than 75	Very good	VVK securing a very good grade can be given an incentive through additional contingency support ranging from Rs. 5 to 10 lakh to further strengthen their activities
From 50 to 75	Good	VVK scoring a good grading can be encouraged through further guidance to improve their performance
Less than 50	Average	If a VVK gets average grading consecutively for two years, an Advisory Team should be set up by Head Extension Division, RRI to find out the major constraints and suggest appropriate measures for improving the performance.

7.3. State Level

State Action Plan Workshop should be conducted once a year for formulating a technical programme of VVKs for effective convergence, implementation and monitoring of the scheme. Representatives from relevant institutions and projects would be invited. A State-wise Committee for approval of the Annual Action Plan of VVKs could also be created.

7.4. District Level

The Head of the host institution would exercise the overall supervision on the effective functioning of VVK. Sr. Scientist-cum-Coordinator would be the overall in-charge of coordination and monitoring of mandated activities of VVK. Extension Unit of RRI would provide the oversight and advisory function.

A Scientific Advisory Committee (SAC) could be formed as an institutional arrangement to provide necessary technical and management guidance to VVK. SAC would meet once every year before the finalization of the action plan.

The SAC meeting could be chaired by the Head of host Organizations of their respective VVKs and would have representative members from KVK, SFD, nominated experts and concerned RRI. One progressive farmer or forest-based entrepreneur from the district could also be nominated to the SAC. Operational guidelines for functioning of the SAC should be finalized by the RRI.

7.5. Reporting

For the purpose of monitoring, VVKs should adhere to the following reporting system:

- Annual Action Plan in the specified format on or before 1st February for the forthcoming financial year
- Monthly progress report on or before 5th of every month online, quarterly progress report in a stipulated time frame and annual report on or before 30th April of every year in the prescribed formats
- UC by the end of April and AUC by the end of August every year
- Schedule for submission of various reports regarding financial management is presented in another section.

7.6. Documentation and Publications

VVKs would prepare the following documents and submit to the RRI: Annually updated profile of districts covered by VVK

- Five-year strategic plan for VVK activities, once in five years
- Annual Activity report
- Outcome and impact of technology assessment and demonstration, every three years
- Annually updated mailing list of farmers
- Information regarding various relevant schemes of Central and State governments in the districts covered by VVK.

8. Convergence and Linkage with KVKs, SFDs and Others

Given the VVKs' mandate of strengthening technology adaptation mechanisms, it is essential that they leverage on existing frontline extension system of other organizations with a similar focus. These include, but are not limited to SFDs, KVKs, Private Organizations, including NGOs, community-based organizations and programmes/projects implemented by Central and State Governments.

8.1. Linkages with KVKs

KVKs, based at the district level, are well-placed to carry out outreach and extension programmes targeted to farmers, and leveraging their resources would significantly improve the effectiveness of the VVKs. Agro-forestry is an area of mutual interest and focus for both ICAR/KVKs and ICFRE/VVKs and provides significant opportunities for collaboration. The nature, scope and extent of linkage with KVKs need to be expanded. Mechanisms should be developed for regular interaction with KVK Chief Scientist and other technical staff.

A strategic partnership can also be achieved by notifying KVKs as the extension partners of VVKs and providing them with technical, programmatic and financial support. Following are some of the measures that may be adopted:

- Supporting institutions that host KVKs for the establishment of VVKs or notifying some KVKs as VVKs
- Identification of suitable technologies related to agro-forestry and related aspects for the extension available with ICFRE Institutions and sharing it with the KVKs
- Developing technology-specific strategy and action plan involving technology demonstration and capacity building for its adoption in a mission mode by KVKs
- Sharing of literature in the form of brochures, booklets, pamphlets and newsletters etc., on various themes/topics related to agro-forestry for display and sensitization. Financially and technically supporting KVKs to create model agro-forestry plantations including forestry species, establish seed/clonal orchards of important tree species, nursery etc.
- Sharing the technological products developed by VVK to farmers through KVK
- Create opportunities for increased interface with KVK scientists through specially organized programmes by VVK or KVK
- Participate in the Farmer Call Centre of KVK to interact with farmers and address their queries
- Link with the mobile advisory system of KVK by developing district-specific mobile friendly messages related to technologies being promoted by RRI through VVK
- Organize sensitization programme for Scientists and Programme Coordinators of KVKs on technologies, products, and services of VVK
- Technical contribution to the plantation and agro-forestry component under the Integrated Farming System promoted by KVK
- Jointly organize various programmes including training programme to farmers and farmer mela etc.
- Jointly organize exposure visits to KVKs and VVKs for staff as well as farmers to learn the best practices

- Jointly organize On-farm Trials (OFTs) to confirm the applicability and suitability of the technology and its refinement
- Inviting proposals from KVKs and supporting them through grant funding by ICFRE for agro-forestry related technology assessment, trials, capacity building, extension activities etc.

8.2. Linkages with SFDs

Given the mandate of SFDs in protection and sustainable management of forests SFDs should be a key strategic partner for VVKs and are already one of the main institutions eligible for hosting VVKs. With consistent and significant funding to VVKs, the SFDs would provide greater attention to development and management of VVKs. Care should be taken to place the VVK with Research and/or Training wing of the SFDs. Some measure that may be adopted to ensure better linkages with SFD, even in cases where VVKs are hosted by other institutions are proposed below:

- Ensuring participation of SFD officials in the Advisory and Review Committees of the VVK at district and state levels
- Targeting field staff of SFD for capacity building and training as extension workers
- Jointly organizing programmes on research, training or extension on forestry etc.
- Leveraging forestry and tree cultivation projects are implemented by SFDs to incorporate technologies being promoted by VVK.

9. Funding of VVKs and Financial Management

9.1. Source of Funds

ICFRE would be the main funding source for VVKs for personnel, creation/expansion of its infrastructure and programme activities. It is proposed that the funds for the following schemes/programmes of extension be combined and channelled through the VVK platform:

- VVK
- Demo village
- Modified Direct to Consumer (especially the technologies relevant to farmers/rural enterprises)
- Farmers/Tree growers Mela
- Technology Demonstration Center
- Extension Van

A Revolving Fund Facility should be created at the VVK level to ensure that funds for some core activities and assets (such as nursery) can sustain even if there is a dip in funding from ICFRE in some years. Apart from ICFRE, the host organizations would also contribute significantly in the form of providing existing physical infrastructure and staff for use by VVK. The VVK, through its host organization, would be encouraged to mobilize funds from other sources including research/ project grant funds, service fees for training and advisory services, sale of technological products etc.

9.2. Financial Management of Funds Provided by ICFRE

ICFRE would provide funds for VVKs through the RRIs, which in turn would release the funds to the VVKs through the respective host organizations strictly based on the financial rules and procedure of ICFRE. In the case of VVKs under Government Organizations, ICFRE would release funds to the Head of the Finance and Accounts Wing of these organizations who in turn should transfer the funds to the respective VVK's account within fifteen days, with intimation to the Head Extension Division, RRI. The fund would be transferred through electronic mode. The suggested financial procedures for effective implementation of VVK are as follows:

- The VVKs managed by ICFRE and NGOs should follow the Central government guidelines

for purchase and procurement. VVKs run by other Government Organizations (University/ College) and State Departments should follow the policy and procedure as per their respective University/ State Government rules and regulations

- Expenditure should be done with a prior sanction, approved plan and norms as specified/ approved by ICFRE
- The VVKs should submit all the required documents related to expenditure and income properly in the prescribed format, which should give full information regarding indents, administrative approval of the competent authority, quotations, comparative statement of the quotations, selection of the offer etc.
- Certain financial powers should be delegated to the VVK Coordinator. Local Purchase Committee with 2-3 members may be constituted for VVK and delegated the powers for urgent purchases as per GFR 2017.
- The VVKs should maintain an asset register and stock register for assets and consumables/ non-consumables, respectively. VVKs should maintain separate logbook in respect of each machinery/equipment, including vehicles.
- VVK should follow sub-heads and items of expenditure to be covered under two main heads viz., recurring and non-recurring.
- All host organizations should ensure that no expenditure is incurred in excess of the budgetary allocation on approved items under recurring and non-recurring heads.

9.2.1. Maintenance of Records

The VVK should maintain the following records relating to financial transactions:

- VVK main account – main cash book/subsidiary cash book
- Revolving fund account – cash book
- Assets Register
- Logbooks for vehicles and equipment
- TA register
- Cheque book register
- Service book
- Pay-in slips
- Trainees' attendance register
- Hostel occupancy register
- Individual account for any other project/ schemes
- Payment Advances book (for drawing of advances and watching its settlement)
- Consumable and non-consumable register
- Diary and Dispatch register

9.2.2. Budget Estimate (BE) and Revised Estimate (RE)

- In the first week of September, each VVK should submit the Revised Estimate for the current year and Budget Estimate for the succeeding year containing the requirement of funds in specific budgetary format for approved activities to ICFRE through RRI. Similarly, the Head, Extension Division should furnish the BE/RE to ICFRE (DDG, Extension) for overseeing the VVK activities.
- The interest earned under short-term deposits should be credited to the VVK's main account. Similarly, the amount realized on auction of condemned equipment, furniture, vehicle and other items including fee and miscellaneous receipts should be credited to the VVK main account only. The realization of the receipts received under these heads should be intimated well in advance to the concerned RRI.
- The VVKs shall submit a monthly statement of expenditure by 3rd of every following month to ICFRE through RRI in the prescribed format.
- The host organizations would also ensure that no expenditure in excess of the budgetary allocation is incurred and it should be incurred only for approved items under recurring and non-recurring heads.

9.2.3. Expenditure under VVK Main Account

The pattern of assistance from ICFRE would include the budget for expenditure under various sub-heads of two main heads, viz. "Recurring" and "Non-recurring". The various sub-heads could be:

Recurring heads	Non-recurring heads
• Pay & allowances • Traveling allowance • Office Contingencies • Running and maintenance of vehicles and equipment • Meals/refreshments for trainees • Frontline Demonstrations • On-farm trials/testing • Maintenance of buildings	• Works – Construction of building, nursery & other infrastructure • Equipment, machinery and implements • Teaching aids and laboratory equipment • Furniture, fixtures and fittings • Purchase of vehicles • Establishment of library

9.2.4. Utilization/Audit Utilization Certificates

UC/AUC shall be submitted by the host organization. In respect of non-recurring grants to a VVK, a certificate of actual utilization of grants received for which it was sanctioned in the prescribed format shall be provided. In respect of recurring grants, the funds would be released for the subsequent financial year only after utilization certificate on provisional basis, in respect of the grants of the preceding financial year is submitted. Release of grants-in-aid in excess of 75% of the total amount sanctioned for the subsequent financial year shall be done only after the utilization certification and the annual audited statement relating to grants-in-aid in the preceding year are submitted to the satisfaction of ICFRE. Immediately after the closure of the financial year, the host organization in respect of each VVK shall submit an AUC both in respect of the main account and Revolving Fund account.

9.3. Revolving Fund Account and Management

The provision of Revolving Fund will be made for each VVK to ensure the production and availability of some of the technology inputs crucial in enhancing the overall productivity. When demands of such critical technology inputs are generated, resource crunch should not be a constraint. An amount of Rupees Five lakh is proposed for each VVK as Revolving Fund/seed money. This would be used to overcome the recurring funds' crunch for production of quality seedlings, planting materials, vermicompost, bio-fertilizers and other such technology inputs being promoted by RRI for availability to farmers in operational areas of a VVK. The Revolving Fund shall be utilized only as per the guidelines of ICFRE. A separate Bank Account should be opened by the VVK for Revolving Fund. The running cost for maintenance of instructional farm and demonstration units would be met from this fund. Following guidelines are proposed for management of the Revolving Fund:

- A separate bank account would be opened by the VVK for keeping Revolving Fund. Besides, a separate account book in the VVK would be maintained indicating annual income and expenses incurred from the fund. The account should be annually verified and audited.
- The Revolving Fund/seed money is to be utilized for production of technology inputs, which are normally not available to the farmers through the open market such as quality planting material especially of desired species which are not usually available in departmental or private nurseries, bio-agents, vermicompost, etc.
- The accounts of the fund indicating profits and statement of expenditure would be presented

in Advisory Committee meetings every year. Annual activity-wise accounts in respect of Revolving Fund should be furnished in a prescribed format suggested by ICFRE.

- The Revolving Fund money is refundable to the Council after five years without interest at the rate of 20% (only if it is viable) of the seed money every year starting from the sixth year.
- Any loss during the operation of the Revolving Fund would be borne by the host organization of the VVK except the loss due to natural calamities.
- Profits earned by the VVK through sale of technological products would be utilized for maintenance or renovation of the production units as well as creating new infrastructure and facilities.
- The VVK Coordinator will ensure that the profits earned are plugged back to the Revolving Fund account every year and 25 percent of the funds should be actually utilized every year to improve the infrastructure or for enhancing the capabilities to produce the technology inputs in a better way.
- The VVK Coordinator would have the freedom to use the funds for the purpose for which it is provided and would have the powers for utilization of revolving fund money for meeting the expenses on infrastructure improvement not supported under regular VVK budget.
- The host organization cannot utilize the Revolving Fund money and the profits generated for any other purpose except for the cause of the VVK.

9.4. Standards of Financial Propriety

Every officer incurring or authorizing expenditure from public funds is expected to be guided by high standards of financial propriety. The principles on which emphasis is generally laid are provided below, which are strictly to be followed:

- Should exercise the same vigilance in respect of expenditure incurred from public money, as a person of ordinary prudence would exercise in respect of expenditure of his own money, the expenditure should not be *prima facie* more than the occasion demands, nor exercise powers of sanctioning expenditure to pass an order, which will be directly or indirectly to own advantage
- Public money should not be utilized for the benefit of a particular person or section of the community
- The amount of allowances granted to meet the expenditure of any type should not be the whole source of profit to the recipients
- VVK should have responsibility and accountability to bring efficiency, economy, and transparency in matters relating to procurement and for fair and equitable treatment of suppliers and promotion of competition in procurement.

10. Visibility of VVKs and Development of VVK Brand

To improve recognition and visibility of the VVKs, following measures may be adopted:

- A common identity of VVKs may be created with a common name and common signage. The signage should prominently display the name of VVK, followed by name of the district along with logo of ICFRE, and logo and name of the host organization
- Signages should be displayed at suitable spots at the VVK location such as entrance of the campus housing VVK office and buildings, model nurseries, trial plots and demo plots etc.
- The host organizations should provide space for VVKs on their website or the VVKs could have their own website
- Name of the VVK should be prominently displayed on banners, leaflets/brochures for distribution etc., during programmes organized by VVK
- Copies of VVK's Annual Report and publications should be shared with various relevant departments including SFDs, Agriculture Department and should also be uploaded on the websites of VVK, host organization and ICFRE
- The VVK staff should be encouraged to participate in TV shows, radio-talk shows and represent VVK in workshops, seminars etc., and arrange for publication of news related to their activities in local print media
- VVK should organize annual events where peoples/community representatives from villages in the district are invited. It should promote interface with villagers and farming community, especially involving innovative and progressive farmers and women, at village level in different blocks within the district to help create awareness about the VVK
- VVKs that excel in their performance in certain disciplines could be considered as centers of excellence and supported suitably to undertake greater responsibility for human resource development at regional, state and national levels.
- System of performance-linked additional support based on transparent criteria and guidelines may be established for VVKs and guidelines for the same may be developed by ICFRE
- Each VVK should disseminate knowledge, information and literature through an effective and exhaustive mailing list of farmers, producer groups of forest-based enterprises, JFMC members, Panchayat members etc. that should be updated periodically.
- Information regarding various schemes of Central and State Governments related to forestry, agro-forestry, JFM should be compiled, published and annually updated at the district level by the VVK.

ANNEXURE-1

List of Van Vigyan Kendras

The list contains 31 VVKs, including one VVK under the process of establishment, as of 15 January 2021.

S. No.	Parent Institute	Name of VVK	State/Union Territory	Location	Nodal Officer
1	FRI, Dehradun (6)	VVK, Haldwani	Uttarakhand	UFTA, Hadwani	CCF & Director, UFTA
2		VVK, Hoshiarpur	Punjab	Hoshiyarpur	CF (North Circle), Deptt of Forest & Wildlife
3		VVK, Pinjore	Haryana	Forest Training Institute, Pinjore	CF (Training), Deptt. of Forest & Wildlife
4		VVK, Delhi	Delhi	Hauz Rani Khas, Tughlakabad	Office of PCCF, Deptt. of Forest & Wildlife
5		VVK, Chandigarh	Chandigarh	Botanical Garden, Chandigarh	CF, Deptt. of Forests and Wildlife, Chandigarh Administration
6		VVK, Kanpur[4]	Uttar Pradesh	Kanpur	DNA
7	HFRI, Shimla (3)	VVK, Manali	Himachal Pradesh	FRS, Jagatsukh, Manali	Shri Rajesh Sharma, GCR/HOD, HFRI, Shimla
8		VVK, Leh	Ladakh	Cold Desert Field Research Station	Shri Rajesh Sharma, GCR/HOD, HFRI, Shimla
9		VVK, Jammu	Jammu & Kashmir	Van Vigyan Kendra, Janipur	Shri Rajesh Sharma, GCR/HOD, HFRI, Shimla
10	IFGTB, Coimbatore (3)	VVK, Coimbatore	Tamil Nadu	IFGTB, Coimbatore	Dr. V. Sivakumar, Scientist-F, IFGTB
11		VVK, Kuthiran	Kerala	Kuthiran, Thrissur	Dr. Kannan C Warrier, Scientist-F
12.		VVK, Port Blair	Andaman & Nicobar Islands	Port Blair	Dr. A. Vijayaraghavan, Scientist-E, IFGTB
13	AFRI, Jodhpur (3)	VVK, Bikaner	Rajasthan	Beechwal Nursery,IGNP Stage II Div., Bikaner	Shri Virendra Singh Jora, DCF, IGNP St II Div, Bikaner
14		VVK, Rajkot	Gujarat	Rajkot	Dr. Ganga Saran Singh, DCF (Research), Research & Training Centre, Gandhinagar
15		VVK, Silvasa	Dadar Nagar and Haveli		Shri Ashwin Parihar, DCF (T)
16	IFB, Hyderabad (2)	VVK, Hyderabad	Telangana	IFB, Hyderabad	Mr. E. Manikanta Redyy, Technician-Field/Lab Research, IFB
17		VVK, Koraput[5]	Odisha	Koraput	Mr. Rohit Kumar, Range Officer, Koraput Div.

[4] Managed by Forest Research Centre for Eco-Rehabilitation, Prayagraj

[5] VVK Koraput in also reported by TFRI, Jabalpur as one of the VVKs established by them and Odisha comes within the regional jurisdiction of TFRI, Jabalpur. However the list provided to the study team includes VVK Koraput under IFB, Hyderabad

18	IFP, Ranchi (3)	VVK, Mahilong	Jharkhand	Forest Training School, Mahilong Ranchi	Director, Forest Training School, Ranchi
19		VVK, Hizli	West Bengal	Forest Training Institute, Hizli, Kharagpur	Under process (MoU yet to be signed)
20		VVK, Jadua	Bihar	Aranya Vihar, Shekhpura, Mujaffarpur	Regional Chief Conservator of Forests, Deptt of Forest & Wildlife
21	TFRI, Jabalpur (3)	VVK, Madhya Pradesh	Madhya Pradesh	Sehari Nursery, SFRI Campus, Jabalpur	CCF Research and Extension, Japablpur Circle
22		VVK, Chattisgarh	Chattisgarh	Jora Nursery, Raipur	CCF, Deptt of Forest & Wildlife
23		VVK, Maharashtra	Maharashtra	Forest Research Centre, Jalna	ACF (Research), Deptt of Forest & Wildlife
24	RFRI, Jorhat (6)	VVK, Assam	Assam	Jorhat	Shri R.K. Kalita, Scientist-F & Head, Extension, RFRI, Jorhat
25		VVK, Arunachal Pradesh	Arunachal Pradesh	State Forest Research Institute, Chessa	Md. Ibrahim, Scientist-D, RFRI, Jorhat
26		VVK, Nagaland	Nagaland	Forest Colony, Kohima	Dr. Gaurav Mishra, ScientistC, RFRI, Jorhat
27		VVK, Mizoram	Mizoram	Forest Research Centre for Bamboo & Rattan, Aizwal	Shri H.R. Borah, ACTO, FRC-BR
28		VVK, Tripura	Tripura	FRCLE, Hatipara, Agartala	Shri P.K. Kaushik, Head, FRCLE
29		VVK, Manipur	Manipur	Forest Training School, Imphal	Dr. R.K. Borah, Scientist-G, RFRI, Jorhat
30	IWST, Bengaluru (2)	VVK, Karnataka	Karnataka	IWST Research Station, Bengaluru Rural	Dr. M.V. Durai, Scientist-C, IWST, Bengaluru
31		VVK, Goa	Goa	Research & Utilization Div, Auuem	DCF, Research & Utilization, Aquem, Margao
No. of States Covered: 25 (includes West Bengal where MoU remains to be signed) *States without VVK: Sikkim, Meghalaya; Telangana & Andhra Pradesh have one VVK, Hyderabad*					
No. of Union Territories Covered: 6 and UTs *without VVK: Lakshadweep, Puducherry*					

Source: ICFRE

ANNEXURE-2

RRI-Wise Existing and Under-Process VVKs

S. No.	Parent Institute	No. of VVKs established	VVKs in advanced stage of establishment	Total Number of VVKs (existing & under process	No. of VVKs in UT
1	FRI, Dehradun	6	0	6	2 (Chandigarh, Delhi)
2	HFRI, Shimla	3	1 (Jogindernagar, Himachal Pradesh)	4	2 (J&K, Ladakh)
3	IFGTB, Coimbatore	3	0	3	1 (Andaman & Nicobar Islands)
4	AFRI, Jodhpur	3 (excluding VVK Koraput)	0	3	1 (Dadra & Nagar Haveli)
5	IFB, Hyderabad	2 (including VVK Koraput)	0	2	0
6	IFP, Ranchi	2	1 (Hizli, West Bengal)	3	0
7	TFRI, Jabalpur	3	0	3	0
8	RFRI, Jorhat	6	0	6	0
9	IWST, Bengaluru	2	0	2	0
	Total	**30**	**2**	**32**	**6**

Source: Compiled from data provided by ICFRE and data obtained during field-work or from RRIs

Research Focus & Resources Available with RRIs

ANNEXURE-3

S. No.	Name of ICFRE Institute	Year of estb.	Main research focus & priorities	Geographical coverage	Total Staff	Research & Extension Resources	Centers / Units
1	FRI, Dehradun	1906	Enhancement of forest Productivity, Improvement of planting stock, Rehabilitation of wasteland, Efficient utilization of wood productss and NWFPs; Eco-friendly products and processes	Uttarakhand, Uttar Pradesh, Haryana, Punjab, Delhi	137 (87 Scientists, Officers on Deputation & Techical Staff)	450 Ha. campus, 500 ha Reserve Forest, Labs, Library, Conference hall, Museums (5), Lecture / Training facilities, Bioinformatics center, ENVIS, Herbarium, Bambusetum, Arboretum, Botanical garden, Nurseries, Demo plantations, IT Cell, Brochures, Leaflets, 22 patents, 25 commercialized technologies, Printing press	Forest Research Centre for EcoRehabilitation, Allahabad (1992)
2	HFRI, Shimla	1977	Eco-restoration of cold desert areas and management of alpine pasture lands, Rehabilitation of mined areas and degraded forest, Nursery techniques for QPM, Quality seed Integrated Pest mgt. and disease control, Conservation of NWFPs, Agroforestry extension	Jammu & Kashmir, Ladakh and Himachal Pradesh	96 Sanctioned, 78 filled (53 Scientists, Officers on Deputation & Technical staff)	Labs, Library, Conference facility, Videoconferencing, Training complex, Herbarium, Tree Interpretation Centre, Brochures, Leaflets, Training material on different topics etc	9 Field Research Stations / Nursery (7 in HP, 1 in Jammu and 1 in Ladakh)
3	IFGTB, Coimbatore	1988	Clonal propagation of industrially important species, medicinal plants, Nursery for QPM; Afforestation in problem areas / soils; Bioprospecting of renewable forest resources, Pest & disease mgt; Biofertilizers; Forest ecology, diversity & climate change, Agro-forestry extension	Tamil Nadu, Kerala, Andaman and Nicobar and Lakshadweep Islands	83 Scientists, Officers on Deputation & Technical Support staff; 54 admin. & multitasking staff	11 Labs, Library, Conference & Training facilities; IT Cell, ENVIS, Field trial plots, Seed production orchards; Clonal orchards; Hi-tech nursery; Demo plots, Herbarium, Botanical garden, Mist chambers, Glass house, Brochures, Leaflets, Training material on different topics, Mobile app on tree cultivation etc	3 Field Units, one each in Kerala, Tamil Nadu and A&N Islands
4	AFRI, Jodhpur	1988	Sustainable management of forests, Biodiversity conservation, Silvicultural and biological techniques. Bioremediation, Conservation and sustainable use of forest resources, Rainwater harvesting and conservation, Value addition for NTFPs, Market for timber, fuel wood, bamboos and NWFPs, Technologies for combating desertification, sand dune stabilization, Eco-restoration of degraded ecosystems. QPM, IPM, Agroforestry extension	Rajasthan, Gujarat and Dadra & Nagar Havelli.	Scientists - Sanctioned positions 23; Filled positions 21. Technical Staff - Sanctioned position 65; Filled up 41.	66 ha. campus, Library, IT Cell, GIS Lab Model Nursery (1.8 ha), Interpretation & community centre, demo plantations, Leaflets & pamphlets on 16 spp of arid/semi-arid region & 7 practices; Manuals on 16 relevant technologies & practices, 11 papers on relevant themes (uploaded on website)	

S. No.	Name of ICFRE Institute	Year of estb.	Main research focus & priorities	Geographical coverage	Total Staff	Research & Extension Resources	Centers / Units
5	IFP, Ranchi	1993	Managing Forests and Forest Products for Livelihood Support; Biodiversity Conservation; Forest Genetic Resource Management & Tree Improvement, Natural and artificial regeneration, Cultivation, harvest and post-harvest techniques	Bihar, Jharkhand and West Bengal	40 Scientists & Technical Staff plus administrative staff	Conference & Training facilities, Labs, Libraries, IT Cell, GIS Lab, Nursery, Demo Plots	4 Forest Research / Extension Centres (Forestry Research & Extension Centre, Hazipur; Bihar; NBF, Chandwa, Latehar Jharkhand; FRC, Mandar, Banka Bihar; Environmental Research
6	TFRI, Jabalpur	1988	Eco-restoration of Vindhyan, Satpura and Maikal hills and Western Ghats; Rehabilitation of mined areas; Agroforestry models; Forest protection; Quality seed and QPM - improving forest productivity; Provenance trials of commercially important species; Provenance trials of teak, bamboo, neem, sissoo, safed siris etc. Biofertilizers and biopesticides; Cultivation & processing of NWFPs (Lac); Conservation and value additions of RET species important NTFPs, Lac cultivation, Rehabilitation of mined out & degraded, Productivity enhancement of economically important species, Forest soils, invasive species, forest fires, insect pests and diseases, Promotion of Agro-forestry	Madhya Pradesh, Chhattisgarh, Maharashtra and Odisha	130 (19 scientists and 42 officers)	109 Ha. campus, Community Hall, Conference Hall, Auditorium, Video conferencing, IT facilities, Labs, Library, Museums, bio-technology lab, Trails plots, Demo plots, Nursery, Clonal seed orchard, Germplasm Bank, Several brochures (49), manuals, pamphlets etc	Centre for Forestry Research and Human Resource Development, Chhindwara Station. Sukna, Darjeeling, West Bengal)
7	RFRI, Jorhat	1988	Conservation and natural regeneration of forests; Restoration of degraded Jhum lands; Management of community forests; Bamboo & cane utilization; Planting techniques	8 North eastern states including Sikkim	21 Scientists, Officers on Deputation, Technical Officers; 54 Technical Support Staff; 54 Administrative Staff (Total Sanctioned 193, filled, 129)	Labs, GIS Lab, Herbarium, Botanical Garden, Orchidarium, Hi-tech bamboo nursery, Other nurseries, Mist chamber, green house, Bamboo composite centre, Brochures, pamphlets, manuals etc	1. Advanced Research Centre for Bamboo and Rattan, Aizawl, Mizoram; 2. Forest Research Center for Livelihood Extension, Agartala

Source: Compiled from data available on Websites of concerned RRI (as in April 2021), complemented with information provided by the RRIs

ANNEXURE-4

State-Wise Field Visit Schedule

S.No.	Dates	State	Places visited
1	9 to 12 Nov. 2020	Uttarakhand	Dehradun, Haldwani
2	19 & 22 Nov. 2020	Rajasthan	Jodhpur, Bikaner
3	1 to 3 Dec. 2020	Himachal Pradesh	Shimla, Manali
4	7 to 9 Dec. 2020	Tripura	Agartala
5	10 to 11 Dec. 2020	West Bengal	Kolkata, Kharagpur
6	28 to 31 Dec. 2020	Tamil Nadu	Chennai, Coimbatore
7	11 to 14 Jan. 2021	Madhya Pradesh	Bhopal, Jabalpur

ANNEXURE-5

Participants of Stakeholder Consultations

S.No.	Date of Visit	Name of the Person	Designation & Organization
1	12/10/2020	Dr. Sudhir Kumar	Deputy Director General (Extension), ICFRE, Dehradun
2	12/10/2020	Dr. Charan Singh	Scientist E, Extension Division, FRI, Dehradun
3	9/11/2020	Dr. Ranjana Kala, IFS	Ex-PCCF, Uttarakhand Department of Forest, Dehradun
4	11/11/2020	Dr. I. P. Singh, IFS	Director, UFTA, Haldwani
5	11/11/2020	Sh. Madan Singh Bisht	Forest Range Officer, Interpretation Centre (VVK), UFTA, Haldwani
6	20/11/2020	Mr. M. R. Baloch, IFS	Director & APCCF, AFRI, Jodhpur
7	20/11/2020	Dr. Tarun Kant	Scientist F, AFRI, Jodhpur
8	20/11/2020	Dr. Bilas Singh	Scientist B, AFRI, Jodhpur
9	20/11/2020	Dr. Ashok Kumar Tomar	KVK, Jodhpur
10	23/11/2020	Sh. Harichandra Mahtolia	Forest Guard, VVK / Nursery, IGNP Ph 2, Bikaner
11	23/11/2020	Sh. Dinesh Rana	Forest Ranger, VVK / Nursery, IGNP Ph 2, Bikaner
12	1/12/2020	Dr. Hemant Gupta, IFS	APCCF, Himachal Pradesh Forest Department, Shimla
13	1/12/2020	Dr. S. S. Samant	Director, HFRI, Shimla
14	1/12/2020	Sh. Jagdish Singh	Scientist, HFRI, Shimla
15	3/12/2020	Sh. Susheel Kumar	Forest Guard, VVK Jagatsukh, Manali
16	3/12/2020	Sh. Ramnath	Apple producer (Village Gojra), Jagatsukh, Manali
15	8/12/2020	Sh. Pawan K Kaushik	Regional Director, FRCLE, Under RFRI, Agartala
16	9/12/2020	CCF, Training and Research	Tripura Forest Department, Govt of Tripura, Agartala
17	9/12/2020	Sh. Sourav Anand	Bamboo product maker, Agartala, Tripura
18	10/12/2020	Sh. Ravi Kant Sinha, IFS	PCCF & HoFF, West Bengal Forest Department, Kolkata
19	10/12/2020	Sh. J. T. Mathew, IFS	PCCF, West Bengal Forest Department, Kolkata
20	11/12/2020	Sh. A. Roy	Director, State Forest Training Institute, Hijli Kharagpur
21	30/12/2020	Sh. T. P. S. Mohan, IFS	PCCF, Tamil Nadu Forest Department
22	29/12/2020	Dr. C. Kunhikannan	Director, IFGTB, Coimbatore
23	29/12/2020	Sh. G. Rajesh, IFS	Conservator of Forests, IFGTB, Coimbatore
24	29/12/2020	Dr. V. Sivakumar	Scientist - G, IFGTB, Coimbatore
25	12/01/2021	Dr. G. Rajeshwar Rao, ARS	Director, TFRI, Jabalpur
26	12/01/2021	Dr. S. Sarvanan	Scientist F and Head, Extension Division, TFRI, Jabalpur
27	12/01/2021	Dr. S. N. Mishra	Scientist C, TFRI, Jabalpur
28	12/01/2021	Sh. Alfred Francis	Technical Officer, TFRI, Jabalpur
29	13/01/2021	Sh. Anand Kumar, IFS	PCCF, Madhya Pradesh Forest Department

ANNEXURE-6

Checklist for Stakeholder Discussion with Key Informants from RRIs, SFDs & VVKs

1. Infrastructure and Human Resources for VVK

- Whether the VVK's have well equipped and appropriate infrastructure matching the requirement of their assignments.
- Whether the SFDs have provided space and manpower for making the VVK's functional.
- Whether the VVK's have trained and dedicated manpower for extension activities, with or without trained manpower component from the respective SFDs.
- The organisational structure of the VVK's
- If there are any permanent personnel dedicated for the VVK's, and if so, at what levels.
- Whether such manpower is conversant with the present extension policy of ICFRE

2. Financial Arrangements for VVK

- Whether the VVK's prepare and submit Annual Budget estimates and revised estimates and whether these are prepared in time.
- Whether the VVKs get timely sanction/approval of the BE and RE and whether funds are released in time so that the mandated assignment may be taken up during the targeted financial year.
- Whether the proper books of account are maintained by the VVKs and whether these are audited.

3. Functional Aspects of VVK

- Whether ICFRE provides information material to different VVKs based on state or region-specific requirements.
- Level of interaction of the VVKs with the SFDs/Directorates, Forest Development Agencies/ Forest Development Corporations/state CAMPA.
- Level of Interactions of the VVKs with the State Departments in Charge of Rural development, municipal affairs/urban Development/Tribal Welfare, land and Land revenues, State and Central Medicinal plants Boards/AYUSH
- Level of Interactions of the of the VVKs with timber consuming industries
- Number of interactive sessions with the stakeholders held by the VVKs in one year.
- Number of awareness campaigns organised by VVKs in a state during a period of one year.
- Feedback from the Different stake holders in each state on the assistance received from VVKs.
- Whether the VVKs assess the requirements for training and seedlings etc. from the different stakeholders such as the Forest Departments, the Joint Forest Management Committees and Eco development Committees (in consultation with the respective Forest Divisions).
- Feedback from the Forest Departments and other Stakeholders on assistance in forestry extension extended by the VVKs.
- Whether the VVKS also assist interested persons on growing medicinal plants as an intercrop.
- Whether the VVKs assess the NTFPs available and the extent to which different Non-timber forest produce could be extraction is likely to be sustainable.
- Whether VVKs explore possibility of extension Forestry over area that have been covered under Forest Rights Act.

4. Information Dissemination and Effect of VVKs

- Whether the VVKs have internet-based information dissemination system? If so, whether such arrangements are interactive.
- Whether the VVKs have any dedicated cell for providing information/ assistance across the Window?
- Whether the VVKs have facility for video conferencing?
- No. of beneficiaries
- No. of women beneficiaries
- Success stories/publications

5. Strengthening VVK system of Extension

- VVK establishment
- Partnership with SFD
- VVK functioning
- VVK activities
- Financial management
- Documentation and record keeping
- How to achieve improved results
- Linkages with KVK

ANNEXURE-7

Data Collection form on VVK from RRIs

Parameters	Response
A. Institutional Setup and mandate of VVK	
Year when the VVK was constituted	
What is the formal institutional status of VVK?	
Is the VVK registered as society?	
To whom does the chief functionary (head) of VVK report?	
Degree of functional and financial autonomy VVK has (complete / partial / none)	
Can the VVK generate, utilize and retain its own funds?	
Can it plan for programmes on its own based on assessment of the need?	
Are the mandate & objectives of the VVK formally articulated and written?	
Is there a guideline available for VVK functioning / management?	
B. Income & Expenditure of VVK	
What was the total budget (fund receipt) by VVK for the year 2019-20?	
What was the total expenditure by VVK in the year 2019-20?	
B.1 Source of funds for Capital Expenses (for Creation of Infrastructure) (Write Y for those applicable)	
ICFRE	
Central Government	
State Government	
Others (Specify)	
What % of capital expenses were generated from "Other" sources?	
B.2 Source of funds for Operational Expenses (Write Y for those applicable)	
ICFRE	
Central Government	
State Government	
Fees and Payments for Services - training etc (If yes, specify the % of total fund generated in FY2019-20)	
Sale of seedlings (If yes, specify the % of total fund generated in FY 2019-20)	
Others (Specify all)	
What % of seedlings grown in the VVK nursery are sold?	
How is the price for seedlings determined? (same rate as SFD; market rate; other)	
To whom the seedlings were sold? (SFD; farmers; general public; other (specify))	
B. 3 Expenditure Heads (2019-20)	
What % of the funds was spent for salaries?	
What % of funds was spent for wages?	

Parameters	Response
What % of funds was spent for creation / maintenance of infrastructure, including procurement of equipment?	
What % of total funds was spent on overheads?	
What % of funds was spent for Programme (training, publication, other outreach activities)	
Are the accounts of VVK separately audited?	
C. Physical Infrastructure & Training resources available with VVK	
Area (ha.) of the VVK campus	
Is the VVK situated within the campus of ICFRE institute? (If no, then distance in km from the Institute)	
Is proper workspace available for the VVK staff?	
Does the VVK have its own training hall? (If yes, seating capacity?)	
Is the training centre equipped with audio-visual training equipment?	
Is there lodging facility for trainees within the VVK campus?	
If not, nearest place distance where the trainees are lodged if required (in km)?	
How many computers does the VVK have?	
Is the VVK equipped with Hi-speed internet facility?	
Does the VVK have video-conferencing facilities?	
How many vehicles (4 Wheelers) does the VVK have?	
Does the VVK have transport van for transporting trainees? (If yes, seating capacity)	
Does the VVK have extension Van equipped with audio-visual equipment?	
Does the VVK have generator / power back up?	
Does the VVK have its own library?	
How many paid periodicals does the VVK subscribes to at present?	
On how many topics does the VVK have ready-to-use training modules & materials?	
On how many topics does the VVK have ready-to-use audio-visual training materials including video films & documentaries?	
Does the VVK have demonstration or trial plots of plantations? (If yes, how many?)	
Does the VVK have model nursery? (if yes, specify its capacity in terms of seedlings that can be grown)	
Is it a traditional or hi-tech nursery?	
Number of species for which seedlings are generally grown in the nursery?	
What other resources for the training and extension are available with VVK?	
C.1 Topics on which VVK has capacities to organize training. Awareness or extension programmes:	
Nursery practices	
Clonal seedlings and plantation	
Climate resilient / adapted forestry	

Parameters	Response
Carbon forestry	
Tree protection (from insect, pest & disease)	
Soil & Moisture Conservation	
Plantation techniques for difficult sites	
Organic farming	
Composting	
Cultivation of medicinal plants	
Forest product processing & utilization (including for NTFPs)	
Sustainable Forest Management	
Forest Certification	
Joint Forest Management	
Agro-forestry models	
Others (Specify)	
Are there topics for which the SFD and other agencies approach only/mostly VVK for training and guidance?	
Is there any difference between the training provided by the SFD training centres and training provided by VVK?	
D. Human Resource available with VVK	
No. of sanctioned personnel (grade wise)	
No. of actual personnel (grade wise)	
No. of full-time employees in VVK	
Number of part time employee in VVK	
No. of contractual employees in VVK	
No. of personnel who are on deputation from SFD, ICFRE or other institution	
Number of Technical Staff in VVK	
Number of Administrative Staff in VVK	
Number of Daily Wage Workers employed by VVK	
No. of employees in VVK who formally trained as Master Trainers	
No. of employees in VVK who are trained in extension (approaches, methods, tools etc)	
No. of in-house staff of VVK are engaged in conducting training programmes	
Does the VVK engage outside Resource Persons for training? (Always/Sometimes/Never)	
No, of days spent by in-house staff for training and extension activities of VVK per year?	
Average tenure of Technical staff currently in the VVK	
Give your assessment if the VVK staff are overworked or underworked	
E. Functioning & Performance of VVK	
What were the main activities taken up by the VVK in year 2019-20?	

Parameters	Response
E.1 Which of the following activities have been taken up by the VVK in past:	
Training for FD staff	
Training for farmers	
Training for Others (specify)	
Awareness campaign	
Advisory and technical support to FD staff in field	
Advisory and technical support to farmers	
Advisory and technical support to others	
Others (Specify)	
No. of training programmes taken by VVK per year	
No. of persons normally trained by VVK per year	
SFD staff	
Farmers / JFMC members / villagers	
Village Women	
Others (Specify)	
No. of awareness campaigns undertaken by VVK per year?	
Does the VVK prepare Annual Plan including Budget?	
Does the VVK undertake Training Needs Assessment?	
Does the VVK prepare annual training calendar?	
E.2 How are the programmes undertaken by VVK decided?	
Based on requirement articulated by ICFRE / Institute	
Based on requirement specified by SFD	
Based on requirement of villagers / farmers	
Based on requirement by Private agency / NGOs	
Parameters	
Based on other considerations	
F. Nature of support received from ICFRE	
Financial grant (Yes / No)	
Training module and material (Yes/No)	
Training equipment (Yes/No)	
Extension material (Yes/No)	
Publications & Newsletter for distribution (Yes/No)	
Training of Trainers for technical staff (yes/No)	
Staff on deputation (Yes/No)	
Equipment for training and demonstration (Yes/No)	

Parameters	Response
G. Nature of support received from SFD	
Financial grant (Yes / No)	
Training module and material (Yes/No)	
Training equipment (Yes/No)	
Extension material (Yes/No)	
Publications & Newsletter for distribution (Yes/No)	
Training of Trainers for technical staff (yes/No)	
Land (Yes/No)	
Building (Yes/No)	
Equipment and machinery (Yes/No)	
Staff - Nodal Officer (Yes/No)	
Resource persons for training (Yes/No)	
Electricity & Water Supply (Yes/No)	
H. Network, Linkage & associations	
How frequently do the staff of VVK interact with Research wing of SFD?	
How frequently do the staff of VVK interact with Training wing of SFD?	
How frequently do the VVK staff interact with villagers / farmers / JFMCs/ SHGs?	
How frequently do the VVK staff interact with KVK staff?	
How frequently do the VVK staff interact with private and non-government organizations?	
How frequently do the staff of VVK interact with training institutions outside ICFRE network?	
Is the VVK formal member of any professional network related to training, forestry, agro-forestry etc?	
Has the VVK ever been approached by NGOs / Private companies for organizing programmes?	
Has VVK entered into any agreement with any institution for providing services?	
I. Outreach & visibility	
Is the campus, building and nursery clearly marked as belonging to VVK through a signboard?	
Do you have a website? (Specify if it is linked to the Institutes/centres website)	
Do you have a Facebook page?	
How do you assess the awareness of the general public and non-SFD officials in the area regarding VVK? (Excellent, Good, Poor, No awareness)	
Does the VVK maintain a mailing list for regular distribution of extension material?	
J. How do you assess the impact of your extension / training programmes?	
Parameters	
Casual feedback from trainees of the programme	
Formal impact assessment study	
Other method	

Parameters	Response
Has a formal study been ever undertaken to assess the outcomes/impact of the techniques and processes promoted by VVK?	
Do you know of any success stories as a result of training and extension activities of VVK? (Many, Some, Few, None)	
What is the USP of the VVK that separates it from other similar institutions (SFD training centres & nursery; KVK etc)	

ANNEXURE-8

Management Set-Up for VVKs

S. No.	Parent Institute	No. of VVKs managed by				Total
		ICFRE Institute / Centre	SFD Training Institute	SFD Research / Extension Wing	Other Wing of SFD	
1	FRI, Dehradun	0	3	3	0	6
2	HFRI, Shimla	3	0	0	0	3
3	IFGTB, Coimbatore	3	0	0	0	3
4	AFRI, Jodhpur	0	0	1	2	3
5	IFB, Hyderabad	1	0	1	0	2
6	IFP, Ranchi	0	2	1	0	3
7	TFRI, Jabalpur	0	0	3	0	3
8	RFRI, Jorhat	1 (FRCLE)	4*	1* (SFRI)	0	6
9	IWST, Bengaluru	1	0	1	0	2
	Total	**14**	**4**	**10**	**2**	**31**

Source: Compiled by Study Team based on data provided by ICFRE; Includes one under-process VVK
** De-facto managed by Extension Division, RFRI*

ANNEXURE-9

Performance Assessment Scores for Sampled VVKs

Scores given by the Study Team based on information / data collected during field study and from secondary documents

S. No.	Assessment Criteria	Van Vigyan Kendra (Score out of Maximum 10)					
		Agartala	Bikaner	Coimbatore	Manali	Jabalpur	Haldwani
1	Technology assessment & trials	1	1	2	1	1	1
2	Technology Demonstration (model nursery)	4	2	5	4	2	2
3	Literature display and distribution	4	4	6	4	3	5
4	Training programmes organized	5	3	6	4	2	2
5	Other Extension activities undertaken	3	1	5	2	1	1
6	Production and supply of QPM	4	4	3	3	3	1
7	Instructional facilities and demonstration units	3	1	5	2	3	2
8	Linkages with government programmes	5	2	6	2	2	2
9	Linkages with SFD	6	5	8	4	7	9
10	Linkages with community groups/ JFMC /SHGs	6	2	5	5	2	2
11	Linkages with KVK	0	2	5	3	0	0
12	Linkages with other institutions & NGOs	6	3	7	3	3	2
13	innovative programmes	4	1	5	1	1	0
14	Use of ICT for extension	2	1	4	1	1	1
15	Documentation and reporting	4	2	5	2	1	1
16	Impact observed / reported	4	2	5	2	1	1
17	Ability to mobilize human resources for VVK	3	1	5	4	2	2
18	Status of infrastructural facilities	5	2	8	6	4	3
19	Fund allocation from ICFRE	2	4	4	3	1	1
20	Fund utilization	8	3	10	5	1	1
21	Mobilization of funds from other sources	3	1	5	1	1	1
22	Revenue generated from sale of seedlings	0	4	0	0	1	2
23	Visibility and awareness among stakeholders regarding VVK	2	1	3	1	1	1
	Total Score	**84**	**52**	**117**	**63**	**44**	**43**
	Performance Rank	**2**	**4**	**1**	**3**	**5**	**6**

ANNEXURE-10

Summary of Suggestion from Stakeholders

VVK Establishment

1. MoUs should be possible other qualified institutions, apart from SFD, for VVK
2. Timely renewal of MoUs for VVK
3. Partnership should be with wings of SFD such as Research, Training, Extension, Social Forestry, Development wing, which have sufficient infrastructure and human resource for large-scale activities by VVK
4. ICFRE institution should have greater say in the location of the VVK assets such as nurseries, demo units / plantations
5. KVKs in areas with high potential for forestry may be identified / notified as

   VVK for showcasing / demonstrating technologies through agreement with ICAR
6. Research Stations of ICFRE Institutions can be developed as VVK for showcasing / demonstrating technologies by infusing one time grant for creating additional facilities / infrastructure
7. More VVKs should be established to more effectively cover the communities in different regions within a state, especially in areas where they do not get opportunities for training and demonstration
8. Existing infrastructure and resources of Research, Extension & Training wing of SFD should be utilized for establishing more VVKs

VVK Human Resource

9. Extension Division of the RRIs needs to be strengthened with appropriate number of trained manpower from relevant disciplines for effective extension
10. ICFRE personnel could be deputed to VVKs

VVK Funding

11. Sustained and assured funding for extension (VVKs) is required.
12. More funds should be allocated for Extension in general and VVK in particular for greater visibility of RRIs as well as VVKs as well as impact.
13. Funds for Extension / VVKs should be augmented through externally aided projects

VVK Functioning & Extension Strategies

14. A VVK could cover a cluster of districts or other areas by collaborating with institutions / SFD (Research & Extension) wings in other locations for creating learning resources and organizing extension programmes
15. Trials and demo plantations / units may be established in various locations in collaboration with various types of institutions (SFD Research / Extension /Training Wing; SFRIs, KVKs, Forestry Colleges, NGOs etc) and a centralized database for the same could be maintained at the VVK level
16. Potentially suitable technologies for trial and demonstration should be identified
17. System for need assessment for use of new technologies and practices from farmers and communities should be established
18. Major forest nurseries and plantations managed by Research & Extension Wings of SFD should be utilized to demonstrate research results, time to time in collaboration with SFDs.

19. Better access to and sharing of relevant technologies and package of practices among RRIs and other institutions, including related extension material
20. Organize study tours of farmers to parent ICFRE institutes & other locations to expose them to technologies or practices demonstrated there
21. Greater use of ICT for an extension such as development and use of digital / online platforms, mobile applications, social media to connect with stakeholders
22. System of incentives (financial reward, compensation, recognition etc) should be created for adoption for certain technologies/ practices by farmers / rural communities

Strengthening of Extension Network & Linkages with KVKs and SFDS

23. Develop provision and guidelines for technical backstopping and financial support for community groups such as Farmers group, SHGs, JFMCs, NTFP Collectors group etc for implementation of technologies/ practices
24. Linkages between VVK and KVKs or SFDs should be at systemic level
25. Linkages with Skill India Programme should be established
26. Project mode assured funding may lead to greater participation from partner institutions such as SFD

ANNEXURE-11

Indicative List of Technologies for Extension through VVKs

Sourced and compiled from ideas ICFRE documents, RRI level research areas and activities, SFD serving and retired officials, suggestions from forestry and livelihoods experts, NGOs working with forest-fringe communities on JFM/CFM, forest conservation and forest-based livelihoods

S. No.	Ideas for Technologies & Practices for extension through VVK
1	Agro-forestry models and systems with forestry species
2	Agro-forestry for patta lands with forest vegetation allocated under FRA
3	High yielding clonal plantations and their management (eucalyptus, poplar, casuarina, melia, sissoo, MPTs etc)
4	Nursery and planting techniques for commercially important forestry species for income
5	Nursery and plantation techniques for fuelwood and fodder species
6	Climate-resilient planting models
7	Cultivation of commercially important and rare /endangered / threatened MAPs
8	Nursery and planting techniques for mangroves
9	Techniques to enhance the production of wild fruits and vegetables in natural forest
10	Plantation techniques for difficult areas - saline land, water logged, mined area etc
11	Production and use of Bio-growth enhancers, Bio-fertilizers, Vermicompost, Azolla etc
12	Production and Use of Bio-insecticides & Bio-pesticides
13	Techniques for wood preservation and treatment
14	Value addition techniques and marketing for various NTFPs and MAPs
15	Protocols for sustainable harvesting of commercially important NTFPs and MAPs
16	Bamboo nursery and plantation management
17	Treatment technique for green bamboo, bamboo preservation
18	Bamboo utilization
19	Bamboo and wood handicrafts
20	Bio-polymer based binding material for incense sticks
21	Plantation techniques of forestry food crops (tubers, leafy vegetables etc.) in plantations and natural forest environment
22	Scientific management of community / private natural forest
23	Scientific management of JFM areas
24	Management of regeneration of degraded natural forests
25	Eco-rehabilitation of degraded forests, grassland, water bodies etc
26	Techniques for forest fire control
27	Soil conservation techniques for shifting cultivation areas
28	Water conservation techniques, Spring recharge techniques
29	Conservation of ponds and wetlands
30	Techniques for protection of Riparian area susceptible to erosion through forestry and other low-cost measures
31	Management of private / community grasslands for enhanced production
32	Nursery management and nursery techniques for forestry spp QPM
33	Enhancing service life of wood and bamboos through eco-friendly preservatives

S. No.	Ideas for Technologies & Practices for extension through VVK
34	Vocational skills for forest-based micro-enterprises (honey production, oil extraction, value addition to NTFPs, small nursery for QPM of forestry species etc)
35	Silkworm rearing technologies
36	Lac Cultivation techniques for enhanced production
37	Eco-friendly honey production
38	Cultivation of medicinal mushroom
39	Natural dyes for textile applications
40	Charcoal briquettes making from pine needles, weeds and other waste products from vegetation (bio-duel)
41	Oil extraction and utilization of non-edible oil seeds (biodiesel, soap making etc)
42	Hand-made paper making
43	Leaf plate and cup making
44	Biodiversity / Conservation based enterprises & livelihood (bird watching, wildlife guide, forest food, forest / wildlife-based eco-tourism products etc)
45	Techniques for storage of wild fruits, seeds etc
46	Technologies for weed management in forest environment
47	Tree residue utilization at the micro-enterprise level
48	Technologies for economic utilization of weeds (Lantana camara etc) and nonconventional woods
49	Energy efficient cook stoves
50	Technologies for village-level waste management (eco-friendly bio-waste management)
51	Training under Green Skill Development Programme

ANNEXURE-12

List of Universities Providing Forestry Education in India

Potential Host Institution for VVKs

1. FRI (Deemed to be) University, Dehradun, Uttarakhand
2. Kumaun University, Nainital, Uttarakhand
3. HNB Garhwal University, Srinagar, Garhwal, Uttarakhand
4. GB Pant University of Agriculture & Technology, Pant Nagar, Uttarakhand
5. Veer Chandra Singh Garhwali Uttarakhand University of Horticulture & Forestry, Bharsar Pauri, Uttarakhand
6. Dr. Y.S. Parmar University of Horticulture & Forestry, Solan, Himachal Pradesh
7. Sher-e-Kashmir University of Agricultural Sciences & Technology, Shalimar, J&K
8. CCS Haryana Agricultural University, Hisar Haryana
9. Punjab Agricultural University, Ludhiana, Punjab
10. Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, Uttar Pradesh
11. College of Forestry, Banda University of Agriculture and Technology Banda Uttar Pradesh
12. Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur, Madhya Pradesh
13. Maharana Pratap University of Agriculture & Technology, Jhalawar, Rajasthan
14. College of Horticulture and Forestry, Agriculture University, Kota, Rajasthan
15. Aspee College of Forestry and Horticulture, Navsari Agricultural University, Navsari , Gujarat
16. Dr. Panjabrao Deshmukh Krishi Vidyapeeth Akola, Maharashtra
17. Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli , Maharashtra
18. Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu
19. University of Agricultural Sciences, Bangalore, Karnataka
20. University of Agricultural Sciences, Dharwad, Sirsi, Karnataka
21. University of Agricultural & Horticultural Sciences, Shimoga, Karnataka
22. Kerala Agricultural University, Thrissur , Kerala
23. Odisha University of Agriculture & Technology, Bhubneshwar, Odisha
24. Uttar Banga Krishi Vishwavidyalaya, Cooch, Behar, West Bengal
25. Birsa Agricultural University, Ranchi, Jharkhand
26. Indira Gandhi Agricultural University, Raipur, Chhattisgarh
27. Guru Ghasidas University, Bilaspur, Chhattisgarh
28. North Eastern Regional Institute of Science & Technology, Nirjuli, Arunachal Pradesh
29. Central Agricultural University, Pasighat, Arunachal Pradesh
30. Mizoram University, Aizawl
31. Tripura University, Suryamaninagar, Agartala, Tripura
32. Amity University, Noida, UP

ANNEXURE-13

List of NGOs Hosting KVKs

Potential host institutions for hosting VVKs regarding agroforestry extension

S. No.	Name of NGO
1	Agril. Development Trust, Sharda Nagar, Baramati, Pune. Maharashtra
2	Ambuja Cement Foundation, New Delhi
3	Banasthali Vidyapith, Banasthali, Tonk, Rasjathan
4	Bapooji Sewak Samaj, Chakkopallam, Kumily, Kerala
5	Belgaum Integrated Rural Development Society, Naganur Belgaum, Karnataka
6	Bhagwat Bhakti Ashram, Rewari, Haryana
7	Bhartiya Agro Industries Foundation, Baroda
8	Bhatavasalam Memorial Trust, Chennai (KVK Tanjavur)
9	Centre for Development & Communication Trust, Theni, Madurai, Tamil Nadu
10	Centre for Rural Development & Environment, Bhopal
11	Chaarvak Socio-Eco Development Trust, Khagaria, Bihar
12	Christian Agency for Rural Development, Pethennamthitta, Kerala
13	CREED, Chidambaram, Distt. Cuddalore, Tamilnadu
14	D.Y. Patil Education Society, Kolhapur. Maharashtra
15	Deccan Development Society, Hyderabad
16	Deen Dayal Research Institute, New Delhi (4 KVKs)
17	Dr. Bhim Rao Ambedkar Welfare Society, Allahabad
18	Dr. Hedgewar Seva Samiti, Dhule, Nandurbar, Maharashtra
19	Ekalavya Foundation, Hyderabad, Telangana
20	Foundation for Environment and Economic Dev. Services, Imphal, Manipur
21	Gandhi Vidya Mandir, Sardar Shahar, Churu, Rajasthan
22	Gokhle Edn. Society, Vidyanagar, Nashik
23	Grama Nava Nirman Samithi, Karimnagar, Telangana
24	Gramin Vikas Trust, Ranch, Jharkhand (VVK Godda)
25	Grammonnati Mandal, Village Narayangaon. Distt. Pune
26	Gramothan Vidya Peeth, Sangaria, Hanumangarh, Rajasthan
27	Guru Gorakshnath Seva Sansthan, Gorakhpur, UP
28	Holycross V.T.I., Hazaribagh, Jharkhand
29	J.N. Instt. of Edn. Sci. & Tech. Research, Nanded, Maharashtra
30	Jeevan Jyoti Charitable Trust, Parbhani, Maharashtra
31	JSS, Mahavidyapeeth, Ramanuj Rd, Mysore
32	K.H. Patil Agril. Sciences Foundation, Distt. Gadag, Karnataka
33	Kalayani Gorakshan Trust, Pune
34	Kalukheda Shiksha Samiti, Ratlam, MP
35	Kalyan. Vill- Bongobari Vivekanand Nagar Purulia, West Bengal
36	Kamla Nehru Memorial Trust, Sultanpur, UP
37	Karnataka Lingayat Education Society, Belgaum, Karnataka
38	Kasturba Gandhi National Memorial Trust, Kasturba Gram, Indore

S. No.	Name of NGO
39	Kunwar Ram Bux Singh Edn. Society, Lucknow
40	Lokbharati Gramvidyapith, Sihor, Distt. Bhavnagar, Gujarat
41	Lokmatas Devi Ahilya Bai Holkar Social National Mission, Burhanpur, M.P.
42	Mahatma Gandhi Mission, Aurangabad, Maharashtra
43	Malwa Mahila Vikas Samiti, Bhopal
44	Manav Vikas Evam Sewa Sansthan, Lucknow
45	Mangal Bharti Bahadurpur, Vadodara, Gujarat
46	Manjara Charitable Trust, Latur, Maharashtra
47	Marathwada Shethi Sahayya Mandal, Jalna, Maharashtra
48	Mehsana District Education Foundation, Khera, Mehsana
49	Mitraniketan, Vellanad, Tiruvananthapuram, Kerala
50	MYRADA, Banglore (KVK Erode)
51	Navsanjivan Shikshan Prasarak Mandal, Yavatmal, Maharashtra
52	PDKVAAS, Bhopal
53	Pragati Trust, Chomu, Jaipur, Rajasthan
54	Pravara Institute of Research & Education in Natural & Social Sciences, Ahmednagar, Maharashtra
55	Raja Avdesh Singh Memorial Society, Pratapgarh, UP
56	Rama Krishna Mission Ashram, Morabadi, Ranchi, Jharkhand
57	Ramakrishna Sewa Kendra, Kolkata
58	Ranvir Rananjay Degree College Association, Amethi-Sultanpur, UP
59	Rashtriya Seva Samithi (RASS), Sevanilayam, Tirupati, Andhra Pradesh
60	Rayalseema Seva Samiti, Chittoor, Andhra Pradesh
61	Rich Field Agro-e-Research & Development Centre, Nashik, Maharashtra
62	Rural Agro. Research & Development Society, Juhu, Bombay
63	Rural Development & Research Foundation, Akola, Maharashtra
64	RVS Education Trust, Dindigul
65	S.K. Choudhary Educational Trust, New Delhi
66	Saint Namdeo Sevabhavi Sanstha, Hingoli, Maharashtra
67	Samata Seva Kendra, Sitamarhi, Bihar
68	Sanskriti Samvardhan Mandal, Nanded, Maharashtra
69	Santhal Paharia Seva Mandal, Deoghar, Jharkhand
70	Saraswati Foundation for Rural Development and Training, Chennai
71	Sarpanch Samaj, New Delhi
72	Sarswati Gram Vidyapeeth, Samoda, Patan, Gujarat
73	Satpuda Edn. Society Jalgaon, Buldana, Maharashtra
74	Satpuda Vikas Mandal, Jalgaon, Maharashtra
75	SCAD, Vannarpettai Tirunelvelli, Tamilnadu (KVK Tutikorin)
76	Sewa Bharti, Kapgari, West Midnapur, West Bengal
77	Shabari Krishi Pratshtan, Solapur, Maharashtra
78	Sharam Sadhana Trust, Amravati, Maharashtra
79	Sharam Safayalya Foundation, Amravati, Maharashtra
80	Shiv Gramodyog Mandal, Kathua, J&K

S. No.	Name of NGO
81	Shram Bharati, Khadi Gram, Distt. Jamui, Bihar
82	Shri Marutrao Ghule Patil Shikshan Sanstha, Ahamednagar, Maharashtra
83	Sindhudurg Zilla Krishi Pratishthan. Sindhudurg, Maharashtra
84	Society for Creation of Heaven on Earth (SCHE), New Delhi
85	Society for Upliftment of Rural Economy, Barmer, Rajasthan
86	Sri Aurobindo Institute of Rural Development, Nalgonda, Teleangana
87	Sri Hanumantharaya Educational & Charitable Society, Kurnool, Andhra Pradesh
88	Sri RamkrishnaAshram, South 24 Parganas, West Bengal
89	St John Educational Trust, Perambalur, Tamil Nadu
90	SUVIDE Foundation, Washim, Maharashtra
91	Taralabalu Rural Development Foundation (TRDF), Davanagere, Karnataka
92	UPASI, Coonoor, Nilgiri, Tamil Nadu
93	Utlou Joint Farming Cum Pisci Culture Coop. Society Ltd., Bishnupur, Manipur
94	Vanvasi Seva Kendra, Bhabhu, Bihar
95	Vasant Prakash Vikas Pratisthan, Sangli, Maharashtra
96	Vidya Bhawan Society, Badgaon, Udaipur, Rajasthan
97	Vinayashram Cherukupalli Mandal, Guntur, Andhra Pradesh
98	Youth For Action, Secunderabad, Telangana

Note: Some NGOs host more than one KVK
Source: ICAR

Budget for Modified VVK under High Investment Model

ANNEXURE-14

		Detail	Unit	No. of Unit	Unit Cost	Total (year 1)	(Yr 2 to 5) per year	Total (Year 2 to 5)	Total for 5 years	Remarks
A	**Immovable Infrastructure**									
1.1	Land (for nursery & demo)	2 to 5 Ha				0	0	0	0	To be provided by host institution
1.2	Fencing / boundary	As appropriate				0	0	0	0	To be provided by host institution
1.3	Administrative building	At least 150 sq mtr	sq. mtr.	150	27500	4125000	0	0	4125000	Maintenance included under D
1.4	Training Hall	200 sq mtr	sq. mtr.	200	27500	5500000	0	0	5500000	Maintenance included under D
1.5	Trainee Hostel	300 sq mtr	sq. mtr.	300	27500	8250000	0	0	8250000	Maintenance included under D
1.6	Staff quarter	At least 2; 550 sq mtr	sq. mtr.	550	27500	15125000	0	0	15125000	Maintenance included under D
1.7	Water and irrigation facility	12 acre	Acre	12	40000	480000	0	0	480000	Maintenance included under D
1.8	Storage godown	100 sq mtr	sq. mtr.	100	17000	1700000	0	0	1700000	Maintenance included under D
1.9	Work shed	25 sq mtr	sq. mtr.	25	17000	425000	0	0	425000	Maintenance included under D
1.10	Vehicle / implement shed	50 sq mtr	sq. mtr.	50	17000	850000	0	0	850000	Maintenance included under D
1.11	Electricity connection	Lumpsum				2511000	0	0	2511000	@ 7.5 % total cost for head 1.1 to 1.10
Sub Total A						**38966000**	**0**	**0**	**38966000**	**One time grant of INR 40 million per VVK**
B	**Movable Infrastructure**									
2.1	Furniture's & fixtures for office and hostel	Lumpsum	Lumpsum			1500000	125000	500000	2000000	
2.2	Library	Lumpsum	Lumpsum			150000	15000	60000	210000	This cost includes Book shelf, Chairs, table
2.3	Communication Facilities including Internet	Lumpsum	Lumpsum			100000	10000	40000	140000	ICT, internet, A/V facilities
2.4	Lab equipment	Lumpsum	Lumpsum			150000	10000	40000	190000	
2.5	Machinery & tools	Lumpsum	Lumpsum			500000	10000	40000	540000	for soil, water & plant testing
2.6	Training & extension Equipment	Lumpsum	Lumpsum			500000	200000	800000	1300000	

2.7	Vehicles	Lumpsum	Lumpsum			1000000	50000	200000	1200000	One 4-wheeler, One 2-wheeler
	Sub-Total B					**3900000**	**420000**	**1680000**	**5580000**	**INR 5.6 million over 5 years**
C	**Human resource**									
3.1	Sr. Scientist cum VVK Coordinator	Full time	Month		12	100000	1200000	6126120	7326120	assuming 10% increment per year
3.2	Scientist / Technical Officer / SMS	Full time	Month		12	60000	720000	3675672	4395672	assuming 10% increment per year
3.3	Technical Staff cum Nursery manager	Full time	Month		12	40000	480000	2450448	2930448	assuming 10% increment per year
3.4	Admin Assistant / Accountant	Full time	Month		12	25000	300000	1531530	1831530	assuming 10% increment per year
3.5	Skilled Support staff	Full time	Month		12	20000	240000	1225224	1465224	assuming 10% increment per year
3.6	Computer Assistant	Full time	Month		12	20000	240000	1225224	1465224	assuming 10% increment per year
3.7	Lab Assistant	Full time	Month		12	20000	240000	1225224	1465224	assuming 10% increment per year
3.8	LDC / Stenographer	Full time	Month		12	15000	240000	1225224	1465224	assuming 10% increment per year
3.9	Driver	Full time	Month		12	15000	180000	918918	1098918	assuming 10% increment per year
	Sub- Total C					**900000**			**23443584**	**INR 23.5 million per VVK over 5 years**
D	**Operation and Maintenance**									
4.1	Model Nursery	Minimum 0.5 ha or 50000 seedlings	Lumpsum			1500000		300000	1800000	Maintenance expenses through Revolving Fund Facility
4.2	Technological production (other than seedlings)	2 products	Lumpsum			200000 200000		200000	400000	bio-fertilizer, bio-pesticide, etc; Maintenance through RF
4.3	Training programmes	Minimum 5 / year				300000 300000 300000		1200000	1500000	Minimum 5 prog, 20 days & 150 participants per year
4.4	Other extension programmes		Lumpsum			250000 2500000 2500000		1000000	12500000	TGM, DV, Demo plots, Workshops etc

4.5	Innovative Extension using ICT, IT, Social media etc		Lumpsum			300000 300000			1500000	
4.6	Documentation, printing, lierature, survey, studies, M&E	Lumpsum per year	Lumpsum per year			500000 500000 500000		2000000	2500000	
4.7	Communication & consumable	Per month	Month		12	10000 120000 120000		480000	600000	
4.8	Vehicle running & travel	Per month	Month		12	20000 240000 240000		960000	1200000	
4.9	Repair & Maintenance of Vehicle, Equipment & Building	Lump-sum per year	Lumpsum per year			50000 50000 50000		200000	250000	
4.10	Water and electricity charges		Month		12	10000 120000 120000		480000	600000	
4.11	Overhead & Contingency		Month		12	30000 360000 360000		1440000	1800000	
Sub-Total D						**2840000 4490000**		**1796000**	**24650000**	**INR 24.5 million per VVK over 5 years**
Grand Total						**46606000 4910000**		**19640000**	**92639584**	**INR 92.6 million per VVK over 5 years**

ANNEXURE-15

Budget for Modified VVK under Low Investment Model

Expense Head	Amount in Yr 1 (INR)	Subsequent years (INR)	Total over 5 years (INR)	Remarks
Establishment of Model Nursery	1500000	0	1500000	Amount to be linked to nursery capacity
Maintenance	0	300000	300000	As Revolving Fund to be replenished from sale of seedlings
Training / Capacity Building	300000	300000	1500000	Min 5 training per year for a total of min 20 days, covering at least 150 participants
Training & Extension Equipment	500000	200000	1300000	Includes ICT, IT equipment
Production of other technological products	200000	0	200000	As Revolving Fund to be replenished from sale of produce
Other extension activities	2500000	2500000	12500000	Including demo village, demo plots, tech trials, Tree grower mela, workshops etc
Extension Innovation	300000	300000	1500000	Innovative extension activities e.g. IT, social media, mobile based
Printing of brochure, pamphlets, newsletter; Documentation; Survey / Studies	500000	500000	2500000	Includes cost of M&E
Sub-Total	**5800000**	**4100000**	**21300000**	
Technical Personnel	2400000	2400000	12300000	One scientist, 1 technical assistant and 1 skilled support staff; 5 yr estimate assumes 10% escalation per year
Administrative Support Staff	100000	100000	500000	Lump-sum towards meeting part of the cost for admin / accounts staff provided by the host institution
Infrastructure support	2500000	500000	4500000	To host institution for creation or expansion of existing infrastructure for office, training, extension activity etc
Vehicle & mobility	1000000	400000	2600000	One 4-wheeler and one 2-wheeler; cost in subsequent years includes cost of driver, fuel and maintenance 2-wheeler
Consumable / Contingency / overhead	500000	500000	2500000	
Sub-Total	**6500000**	**3900000**	**22400000**	
Grand Total	**12300000**	**8000000**	**43700000**	**About Rs. 44 million per VVK for 5 years**

ANNEXURE-16

Budget for Modified VVK Programme Over 10 Years Under Low Investment Model

Establishment Unit Cost = INR 123 Lakh (Year 1)
Maintenance Unit Cost = INR 80 Lakh per year (Year 2 to 6)
Maintenance support for 5 years after establishment for each VVK
No Establishment cost assumed for existing 29 VVKs

Scenario 1: One new VVK/ RRI/ Year (Amount in Lakh)

Year	No of VVKs Supported for establishment	No. of VVKs supported for maintenance	Establishment Budget (INR)	Maintenance Budget (INR)	Total Budget (INR)
1	9	29	1107	2320	3427
2	9	38	1107	3040	4147
3	9	47	1107	3760	4867
4	9	56	1107	4480	5587
5	9	65	1107	5200	6307
6	0	45	0	3600	3600
7	0	36	0	2880	2880
8	0	27	0	2160	2160
9	0	18	0	1440	1440
10	0	9	0	720	720
Total			**5535**	**29600**	**47600**

Scenario 2: Two new VVKs/ RRI/ Year (Amount in Lakh)

Year	No of VVKs Supported for establishment	No. of VVKs supported for maintenance	Establishment Budget	Maintenance Budget	Total Budget
1	18	29	2214	2320	4534
2	18	47	2214	3760	5974
3	18	65	2214	5200	7414
4	18	83	2214	6640	8854
5	18	101	2214	8080	10294
6	0	90	0	7200	7200
7	0	72	0	5760	5760
8	0	54	0	4320	4320
9	0	36	0	2880	2880
10	0	18	0	1440	1440
Total			**11070**	**47600**	**58670**

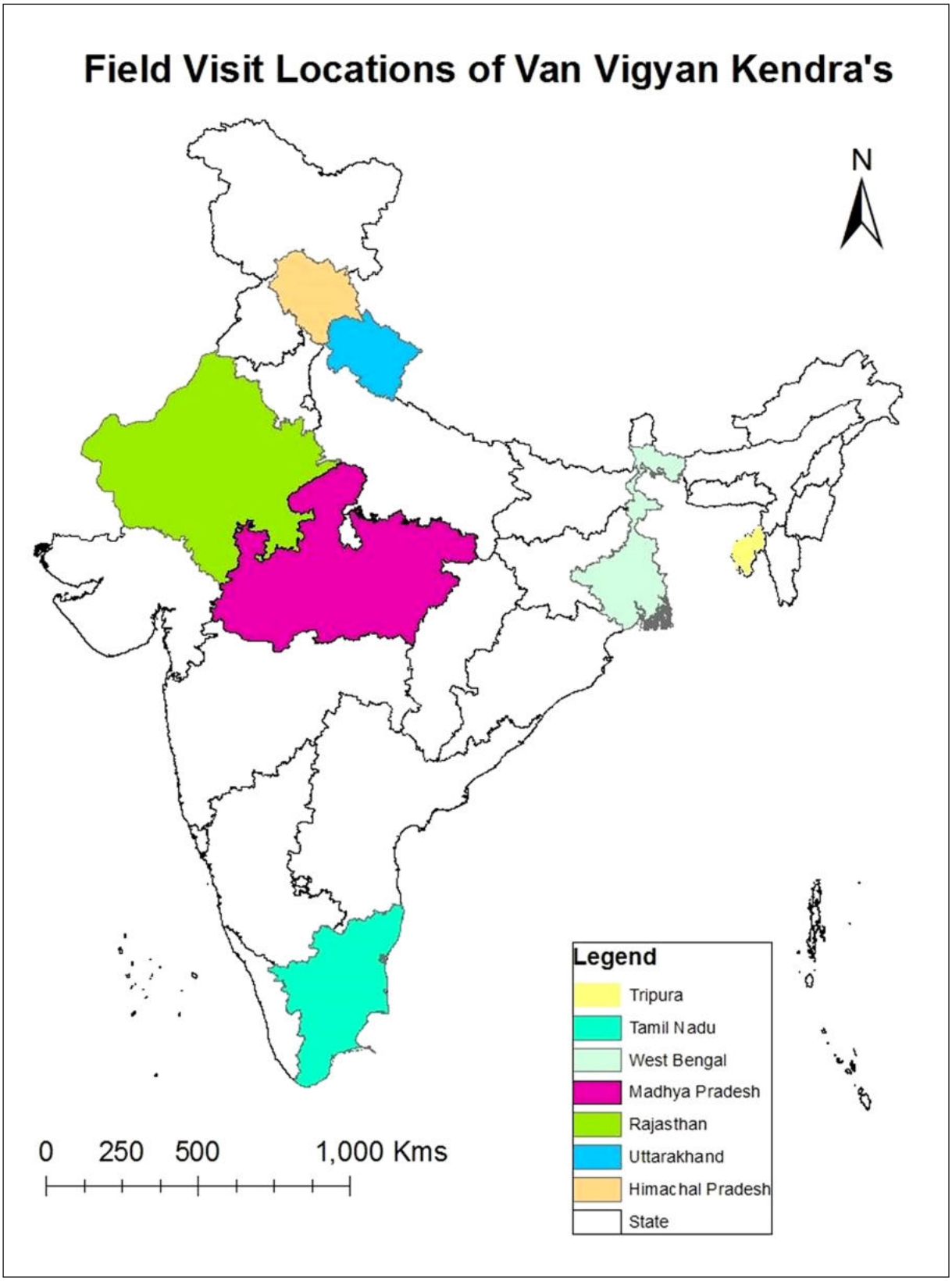
ANNEXURE-17

Literature Cited

1. About KVK. https://kvk.icar.gov.in/aboutkvk.aspx. Accessed on April 15 2021
2. Criteria for Establishment of KVK. http://www.zpd7icar.nic.in/Criteria for Establishment of KVK.pdf. Accessed on 9th April 2021
3. DARE-ICAR Technologies and Initiatives for Farmers Welfare. ICAR, New Delhi. 2020
4. Data and Information are provided on websites of ICFRE Institutes. Accessed on various dates in March & April 2021
5. Extension Strategy and Extension Action Plan for ICFRE – 2018 to 2023. ICFRE, Dehradun. 2018
6. ICAR Annual Report 2020. ICAR, New Delhi. 2021
7. ICAR Budget Book 2018-19. ICAR, New Delhi. 2018
8. ICFRE Annual Reports from FY 2008-09 to 2018-2019. ICFRE, Dehradun
9. ICFRE Vision 2030. ICFRE, Dehradun. 2019
10. Kaushik, P and Yadav Alok. RFRI- Demo Village Program: A mid term review. RFRI, Jorhat. 2010
11. Report of the High-Powered Committee on Management of KVK. Agricultural Extension Division, ICAR, New Delhi. 2013
12. Report of the Working Group on Research, Education, Training, Capacity Building and Information Management for the Environment and Forests Sector for the Eleventh Five Year Plan (2007-2012), Planning Commission, GoI, New Delhi
13. Self Study Report Submitted to NAAC. FRI, Dehradun. 2017.
14. Singh, K M and Singh, Pushpa and Shahi, Brajesh and Shekhar, Dibyanshu. Role of Krishi Vigyan Kendras (KVKs) in Agricultural Extension: An Overview. RPCAU, Pusa. 2012

ANNEXURE-18

Map – States Visited for the Study



ANNEXURE-19

Proceedings of the National Stakeholder's Consultation Workshop on Evaluation of the Working/Effectiveness of Forestry Extension System through The Van Vigyan Kendras and Recommendation for its Strengthening'

Date: 26th August 2021 (10:00 AM to 1:00 PM) **Venue:** ICFRE, Dehradun

Mode: Offline and Online

A National Stakeholder's Consultation Workshop on 'Evaluation of the working/ Effectiveness of Forestry Extension System through the Van Vigyan Kendra and

Recommendation for its Strengthening' was held on 26.08.2021 in dual mode (online and offline modes). The workshop was attended by Director General, ICFRE, DDG (Research), DDG (Education), DDG (Extension), Director (IC), Directors of ICFRE Institutes, Secretary, ICFRE; DIGF (GIM), MoEFCC, ADG, Extension, ICAR, TTL and Co-TTL, ESIP, the World Bank, NABCONS, ICAR and its Institutes, ICFRE and its institutes, Agricultural Universities, Krishi Vigyan Kendras and NGOs, State Forest Departments etc.

Opening of the workshop: The workshop was started with the welcome address by Shri Anurag Bhardwaj, Director (International Cooperation) and Project Director, ESIP, ICFRE Dehradun. He welcomed all the delegates of the workshop representing MoEFCC, the World Bank, NABCONS, ICAR and its Institutes, ICFRE and its institutes, Agricultural Universities, Krishi Vigyan Kendras and NGOs. Further, he apprised that ICFRE has repository of innovative technologies and practices to its credit on different aspects of forestry and endeavours to transfer and disseminate the same to the stakeholders/ end users through the network of Van Vigyan Kendras established in the States and Union Territories and other extension platforms with active collaboration of State Forest Departments. He also stated that ICFRE is implementing the World Bank funded Ecosystem Services Improvement Project in the states of Chhattisgarh and Madhya Pradesh under which ICFRE has engaged M/s NABCONS Pvt. Ltd. as a consultant for the assignment titled Evaluation of the Working/ Effectiveness of Forestry Extension System through the Van Vigyan Kendras and Recommendation for its Strengthening'. He briefed the scope of assignment and outlined the key deliverables of the assignment to be delivered by the consultant (M/s NABCONS Pvt. Ltd.) under the aforesaid assignment.

Dr. Anupam Joshi, Senior Environmental Specialist the World Bank delivered the address in the workshop. He highlighted the role of forestry in livelihood sustenance of the forest dependent local communities in India. He expressed his concerns over the negligible contribution of the forestry sector in country GDP (which is less than 2%). He emphasized the role of Van Vigyan Kendra in supporting forest dwellers and other forest-dependent communities. He suggested that by identification of challenges and opportunities in the forestry sector, promoting forest-based industries, and encouraging forest-based entrepreneurship will increase the income of farmers and at the same time increase the forest cover and improve the ecosystem services. Better integration of technologies from lab to land is yet to be realised. He expressed that finalization of the report will summarise the view for policymakers on the requirement of policy reforms to support forestry sector and labto-land transfer of technology.

Shri A.S. Rawat, Director General, ICFRE in his inaugural address, outlined the importance of Van Vigyan Kendra (VVKs) as a mechanism for outreach and extension of forestry research. He informed that there is a network of 32 VVKs in the country. He informed that activities in VVKs are a low-key affair as extension is not the primary activity of the State Forest Departments. Most of the activities being undertaken in VVKs are related to creating awareness on forest-related issues. He acknowledged the importance of the study for the strengthening of the VVKs. He emphasized the identification of requirements of stakeholders, and dissemination of technologies/ techniques for increasing the income of farmers and other forest dwelling communities. He invited inputs from the delegates of the workshop to improve upon the findings of the assignment.

Technical session: Sh. Ajay Rai, Consultant, NABCONS Pvt. Ltd. presented the key findings of the assignment, wherein he discussed in detail the key findings of the assignment and recommendations proposed for strengthening the VVKs. M/s NABCONS Pvt. Ltd. suggested a modified VVK system by revision of its Vision, Mission, and Mandate, strengthening the network of VVKs, clear definition of role and responsibilities of ICFRE and Host Institution of VVK, dedicated human resource, funding, etc. The presentation was followed by a discussion on the findings of the assignment.

Suggestion from the stakeholder consultation workshop:

- There is an opportunity for a partnership of KVK and VVK for extension of agroforestry in the district having a potential and appropriate stakeholder base for agroforestry. ICFRE's institutes can also liaison with neighbouring KVK for synergy.
- Apart from funding, the lack of well-trained dedicated manpower is another issue that should be addressed for effective functioning of VVKs.
- The MoUs with host agencies/ partner agencies should be reviewed and revised.
- VVKs should be housed with regional institutes and centres. NGOs should be included in the next phase. NGOs having experience in the field of extension and having local presence and acceptability should be preferred for the same.
- VVK units could be established in the existing Forest Research Centres, experimental research stations instead of establishing at new sites.
- Hub and spoke model with centralized VVK imparting training on techniques and technologies for skill up-gradation and floating system of decentralized training for generating awareness can be made.
- Widening of services provided by VVKs, addressing various stakeholders needs to make it more holistic, for example training on NTFP processing, wood seasoning, etc.
- The scope of VVK needs to be articulated in reference to Sustainable Development Goals, Green India Mission, and objectives of State Forest Departments to make it more inclusive. Land parcels distributed under the Forest Right Act, 2006 provides another opportunity, as VVKs can provide trainings to support house-hold for the sustainable management of land for sustained livelihood and biodiversity conservation.
- There should be a performance monitoring system in place for the evaluation of the VVKs. There should be proper documentation of beneficiaries and feedback from primary stakeholders should be considered for the valuation of the VVKs.
- There should be a clear description of changes in the policy, legal and regulatory mechanism for extension of forestry practices beyond the forest, and dissemination of techniques and technology developed for the forestry sector.
- CAMPA funds for the extension of agroforestry and forestry-related livelihood, mandate-specific support under CSR funds, industry tie-ups, dovetailing with national and state schemes for skill development and forestry initiatives, should be explored for funding VVKs.
- VVKs should be taken as a delivery vehicle for all the extension activities related to forest stakeholders.

Other suggestions made by the participants for strengthening the VVKs are as under:

- ICAR, KVKs and NGOs can become host institutions and necessary guidelines need to be framed and given in the final report of the assignment.
- For host institutions, potential NGOs need to be identified and listed in the final report.
- State/ Central Universities can also be identified as host institutions in the final report.
- Agriculture universities can be selected as the center for hosting VVKs.
- High potential districts of the states should be selected for establishing VVKs.

- State Forest Departments should be closely involved in the functioning of VVKs but alternate arrangements should also be suggested in the draft final report.
- VVKs should have enough area for demonstration purposes as proposed 2-5 acres of land is too small for demonstration of forestry practices.
- Full-time permanent staff, preferably from the agro-forestry background, and senior technical staff can be appointed at each VVK.
- Frequent training of appointed staff should be ensured.
- Fund available for Green India Mission may be availed for manpower and establishment for VVKs, only if the objective of VVK covers the activities related to forestry extension & livelihood generation through organising the capacity building programmes for the stakeholders.
- Continuous flow of funds must be ensured at least for 5 years, for which a proper funding mechanism must be suggested and developed in the final report.
- Threat analysis of each recommendation made in the report must be done.
- Necessary mechanism should be suggested for timely review of MoUs with SFDs and other host institutions.
- Emphasis should be given to the implementation of agro-forestry models in the field as KVK has agriculture as an area of prime concern. Besides agroforestry, forest-based nurseries and forest-based industries/ entrepreneurship should also be targeted.
- Existing infrastructure need to be utilised for the establishment of VVKs.
- Vision, mission and goal for each VVK must be set and VVKs module should be region-specific rather than being generalized.
- KVKs can be identified for potential forestry extension services and VVKs & KVKs must be taken as vehicles to deliver technologies.
- Scope of VVK needs to be re-articulated with respect to forestry-related government initiatives such as Sustainable Development Goals, Green India Mission, etc.
- Feedback from primary stakeholders must be considered for evaluating the VVKs
- Joint Forest Management Committees should also be involved in the transfer of technologies and extension of activities carried out by VVKs.
- Impacts of existing VVKs since their establishment should be evaluated.
- Suitable policy level changes for strengthening the VVKs must be suggested in the final report.
- Smooth working of the Van Vigyan Kendra needs to be highlighted as a success story or the best practice in the final report.
- Trainings under Green Skill Development Programme can be organized under the VVK system
- The extension funds available in research projects can also be utilized under the VVK platform to the extent possible
- Change in VVK norms is required for incorporation of Universities, NGOs, etc.
- In each VVK dedicated staff for extension, activities could be posted. Experienced scientists, technical officers and technical assistants, etc. need to be posted. Necessary guidelines for the same need to be suggested in the report.
- For managing VVK, Central VVK (CVKK) at each institute should be established at each institute, the CVKK must have a separate staff including at least one middle-level scientist and two technical staff supported with four contractual staff. All the infrastructure required for effective extension should be created at CVKK (this can be implemented through the CAMPA fund). The CVVK will maintain the record of each VVK under the judication of the respective ICFRE institute. All the training to be undertaken by

institutes should be conducted through CVVK. Necessary guidelines for the same need to be suggested in the report.

- Extension strategy and extension action plan for ICFRE 2018-23 have formats for impact assessment and beneficiary profile. Same need to be studied and suggested suitable guidelines accordingly in the final report.
- For better extension opportunities, a full-fledged website needs to be developed with you-tube channel. Same need to be studied and suggested suitable guidelines accordingly in the final report.
- A VVK app is also needed to ensure better outreach amongst the young generation stakeholders.

Mr. Sanjay, Ghosh NABCON welcomed all the suggestions provided by the participants during technical discussions and ensured to incorporate them in the final report. With the vote of thanks of Dr. R.S. Rawat, Project Manager, ESIP, ICFRE, workshop was successfully summed up.

Designed & Printed at Shiva Offset Press, Dehradun, Ph. 0135-2715748