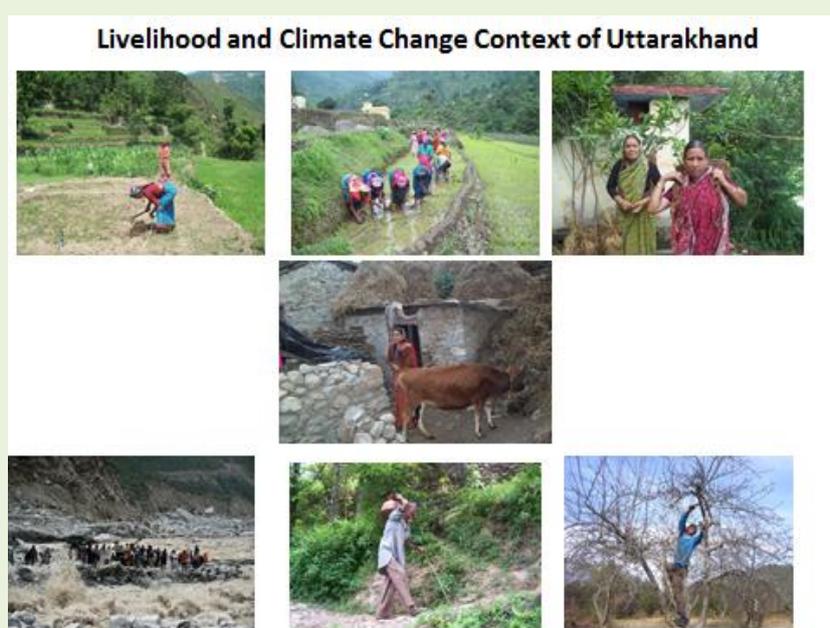


## Project Inception Report

# Climate Smart Actions and Strategies in North Western Himalayan Region for Sustainable Livelihoods of Agriculture-Dependent Hill Communities

In

Uttarakhand, India



### BAIF Development Research Foundation,

**Head Office:** Dr. Manibhai Desai Nagar, Warje, Pune, 411058, Maharashtra ,  
020-25231661, Email: [bkkakade@baif.org.in](mailto:bkkakade@baif.org.in)

**BAIF Uttarakhand Office Contact:** BAIF Institute for sustainable livelihoods and development, (BISLD-Uttarakhand), Nathanpur Ring Road, Mossuri bypass (Jogiwala), Post office Nehrugram, 248005, Dehradun

Phone: 07897993041 Email: [baifuttarakhand@gmail.com](mailto:baifuttarakhand@gmail.com)

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**List of Abbreviations:**

CC: Climate Change

SDP : Sustainable Development Programme

DST : Department of Science and Technology

BIRD : Bankers Institute of Rural Development

ToT : Training of Trainers

CRPs : Community Resource Persons

NREGS : National Rural Employment Generation Scheme

HESCO: Himalayan Conservation Studies and Conservation Organization

PSI : People Science Institute

DDM: District Development Manager

DDN: Dehradun

M& E: Monitoring and Evaluation

U.K.: Uttarakhand

KVK: Krishi Vigyan Kendra

CITH: Central Institute of Temperate Horticulture

NIE : National Implementing Entity

NABARD: National Bank for Agriculture and Rural Development

CDC: Cattle Development Centre

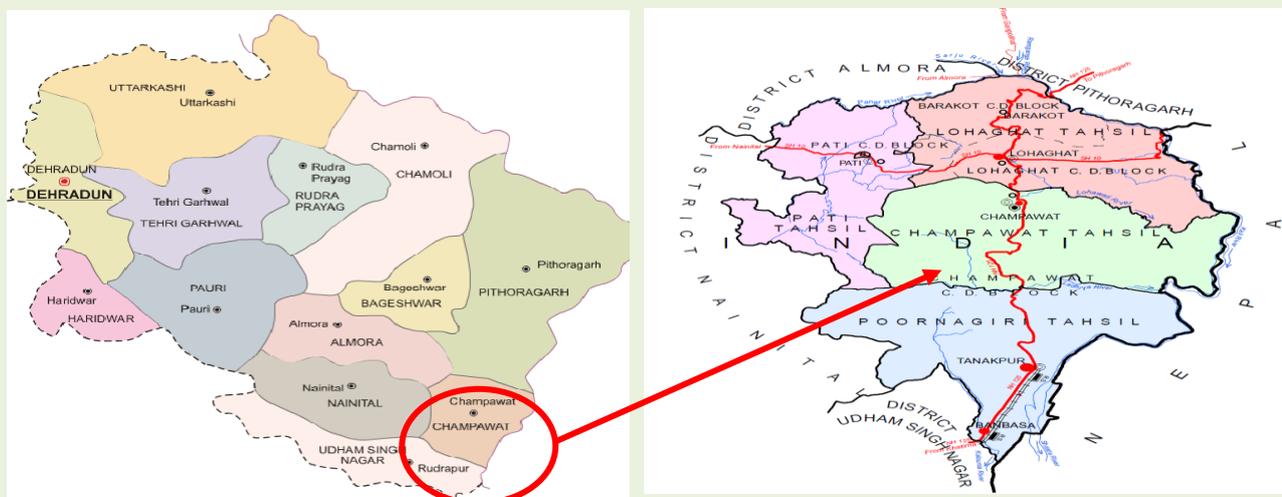
CBO: Community Based Organization

PO: Partner Organization

## 1. BACKGROUND

Climate smart actions and strategies in **North Western Himalayan Region** for sustainable livelihoods of agriculture-dependent hill communities is the strategic approach of this project, under which efforts would be made to introduce set of activities which are expected to improve /sustain the livelihoods of vulnerable hill communities and show ways of diversification of income while also initiating the process of natural resource management in the Himalayan region. Together these interventions are expected to result in to building resilience of farming communities.

The project activities are planned to be implemented in a cluster of 10 villages in Pati and Lohaghat blocks of district Champawat in the state of Uttarakhand, India. The project stands formally approved by Adaptation Fund Board in its 26<sup>th</sup> meeting held on 8-9 October 2015. National Bank for Agriculture and Rural Development (NABARD) is the National Implementing Entity (NIE) for the project and BAIF Development Research Foundation ([www.baif.org.in](http://www.baif.org.in)) is the Executing Entity (EE) for the project.



### 1.1 PROJECT GOAL:

To improve the adaptive capacity of rural small and marginal farmers including hill women in North Western Himalayan region to respond to climate change. This is to be achieved by introducing a combination of Climate Smart Farming Technologies along with required social engineering and capacity building processes. The project also envisages creating field-based evidence of climate resilient strategies and approaches in mountain ecosystems.

### 1.2 PROJECT APPROACH

The project aims to focus on diversification of production systems and improving the institutional capacities to adopt climate smart technologies and practices in Hill context. As a strategy, linkages and partnerships will be developed with relevant technical and scientific institutes in the region for required technology back stopping. Partnerships would be developed with institutes of repute such as, Vivekananda Parvatiya Krishi Anusandhan Sansthan (Almora), G.B.Pant University of Agriculture Technology (Pantnagar), GB Pant Institute Of Himalayan Environment and Development (Kosi, Almora), etc. It has close linkages with the Central Institute of Tropical Horticulture, Mukteshwar and Central, Soil and Water Research Training Institute, Dehradun. The working

relationships have also been developed with local NGOs such as People Science Institute, Himalayan Action Research Centre (HARC), Himalayan Conservation Studies and Conservation Organization (HESCO) in Dehradun, Uttarakhand Dairy Cooperation Federation etc. The collaborative areas will include strategic research, technology demonstrations and transfer, applied field-based research, capacity building and improved outreach. The project also strive to complement on-going government programs and thereby try and achieve an objective of convergence for effective adaptation.

### 1.3 KEY ACTORS:

- AFB- NABARD - MOEFCC (Ministry of Environment, Forests and Climate Change, Government of India)
- BAIF Development Research Foundation
- Community Based Organizations and people's collectives
- Local Communities from the project villages

### 1.4 PROPOSED STRATEGY:

- 1) Participatory field assessment / planning in a cluster & empowerment of local institutes.
- 2) Introduction of suitable technologies at household & landscape level in Hills.
- 3) Capacity enhancement of communities/ CBOs & Community Resource Persons.
- 4) Facilitated knowledge / exchange events involving multiple stake holders.
- 5) Partnership with relevant technical and scientific institutes/departments /agencies in the region.

### 1.5 PROPOSED PARTNERSHIP:

- Key (Indian Council for Agriculture Research (ICAR) Institutes working on hill/Himalayan issues
- Key Government departments / Technical Institutes such as - animal husbandry/ agriculture/ Department of Science & Technology/ Rural development.
- Bilateral & multilateral funding agencies & program such as IHCAP/HICAP/ICIMOD
- Community based organization (CBOs)/ likeminded NGOs/Department Agencies/ Corporate homes etc.

### 1.6 PROJECT COMPONENTS:

1. **Community Mobilization and Organization:** The project will focus on building cohesive groups of villagers to respond positively to climate change. Efforts would be made to mobilize affected communities by way of awareness generation on climate related hazards and by undertaking series of capacity building events for adaptation.
2. **Planning and strategies for improved adoption of climate smart technologies.** It is proposed to focus on strengthening of CBOs/POs for improved adaptation to climatic vulnerability.
3. **Introduction of water resource development actions** such as rejuvenation of natural springs, roof top rainwater harvesting, water use efficiency, water management etc.
4. **Climate smart farming technologies** and farm diversification options for climate resilient livelihoods. Here the main purpose is to diversify livelihood and production systems by integrating various subsystems e.g. vegetable crops, fruit tree, indigenous crops, livestock, etc. Considering that hill conditions and diversity of bio-geographic zones and altitudinal variations provide favorable conditions for growth of many horticulture crops including

temperate and sub-tropical fruits, under the project, thrust would be laid on introduction of hill specific horticulture varieties on farmer's field and on introduction of high value vegetable crops under protected conditions (using bamboo based poly house and innovative agro techniques). The project will focus on formation of farmer producer organizations and link these producers to market.

5. **Conservation, revival and adoption of climate resilient indigenous food crops** are also identified as an important component. There are a number of native crops which can tolerate stress and have adapted well to unique climatic conditions in fragile hill areas. The focus under the project would be on conservation of crop diversity and knowledge associated with it focusing food security, risk mitigation and livelihood development, characterization and evaluation of crop landraces and trials for productivity enhancement of worthy landraces. Establishment of community managed seed banks and promoting village level seed production.
6. Improving the potential of livestock resource in hills as a strategy for risk and income diversification. The focus under this component would be on disseminating technical know-how of different technologies such as improved breeding service with required management practices in livestock resources, nutritious fodder promotion
7. Knowledge Management including knowledge creation and wider dissemination actions

### 1.7 PLANNED OUTPUTS

- Improved community mobilization to collectively plan and undertake climate change adaptation.
- Building resilience through increased water availability and efficient water use in hill region.
- Adoption of climate smart agriculture technologies and farm diversification options for climate resilient livelihoods.
- Improved potential of livestock resources as an option for livelihood stabilization in hills.
- Knowledge generation based on field actions and wider dissemination to enhance awareness of hill communities and stakeholders as well as for better policy inputs.

The project is expected to ensure sustained income for hill farmers in their own settings under changing climate change context while also focusing on the regenerative capacities of natural resources.

### 1.8 EXPECTED IMPACT

- Direct impacts accruing at family level in the pilot areas. (Better income and more productive assets, better management systems etc.).
- Direct impacts accruing at the area level in the pilot areas (e.g. productive and better managed natural resources in the areas through silvipasture).
- A streamlined intervention package on climate change adaptation programs in fragile hill areas for further up scaling and replication.

### 1.9 TARGET GROUP:

The project interventions are proposed directly at the level of near about 800 vulnerable families including hill women, small and marginal farmers and other such vulnerable groups whose

livelihoods are solely dependent on primary sectors such as agriculture and livestock, forest produce etc. Many activities are proposed to be planned considering the issue of growing hardship on hill women who are engaged in farming operations. The indirect beneficiaries would be all the villagers from the project villages.

## **2. Implementation Arrangements and Stakeholder Consultations**

### **2.1 Establishment of Project Office and Initial Activities**

A project office has been set up at State level in Dehradun and at cluster level in Lohaghat to provide required back office support and provide central coordination support.

An interdisciplinary team as indicated below has been formed to operationalize the project. There are experts having background in agriculture, forestry, animal husbandry, natural resource management, Rural Management and agri business as well as community mobilization, strengthening of People's Organization.

1. Shri R. M. Shukla : Livestock specialists , Rural Project Management
2. Dr. Rajshree Joshi : Rural Development specialist, social scientist
3. Shri D. K. Tiwari : Agriculture specialist
4. Dr. Dinesh Raturi: Forestry Specialist
5. Shri Pushkar Singh Bisht : Agriculture , horticulture specialist
6. Shri K.K.Bagoli : Livestock Specialist
7. Shri D. S. Dumaga : Rural Development
8. Shri M.S. Bisht : Cluster level staff
9. Shri Bhuwan Chandra Cluster level staff
10. Shri Bhim Singh Cluster level staff
11. Shri Bhaskar Karnatic Cluster level staff
12. Shri Aadarsh Krishnan : SBI Fellows -Civil Engineer
13. Anvi Mehta: SBI fellow ( Environmental Science)

### **2.2 Setting up of project steering and technical advisory committee:**

The Steering and Technical committees under the project has been constituted with the appointment of members with representatives of relevant departments and organizations. This will set up required Monitoring & Evaluation systems as well as will give inputs to ensure good quality of proposed interventions under the project.

**A State Level Steering Committee is set up involving following members:**

1. Mr. S. Ramaswamy, Chief Secretary, Government of Uttarakhand, **Chairman**
2. Dr. P. Meenakshi Sundaram, Secretary, Animal Husbandry, Uttarakhand, **Member**
3. Dr. B. G. Mukhopadhyay, CGM, NABARD Mumbai HO, **Member**
4. CA D. N. Magar,CGM, NABARD Uttarakhand, **Member**

5. Shri R.N. Jha, State Nodal Officer, State Climate Change Centre, Department of Forests, Dehradun, Govt. of Uttarakhand Member
6. Dr. Rajendra Dobhal, Director General, Uttarakhand State Council for Science and Technology, Member
7. Dr. P.P. Dhyani, Director, G. B. Pant National Institute of Himalayan Environment and Sustainable Development (GBPNIHESD), **Member**
8. Dr. A.K. Srivastav, Ex. Director, VPKAS, Almora, Member
9. Mr. R.M.Shukla, ACPE, BAIF, Member
10. Dr. Rajashree Joshi, TPE, BAIF, Member
11. Mr. Bharat Kakade, Senior Vice President, BAIF, Member Secretary

**B. District Technical Advisory Committee is set up involving following members:**

1. Dr. A. K. Srivastava, Ex. Director, VPKAS, Almora, **Chairman**
2. Mr. Puneet Nagar, DDM- NABARD- Pithoragadh, **Member**
3. Mr. Dinesh Rathuri, Program Coordinator, BAIF Uttarakhand, **Member**
4. Dr. M. P Singh, KVK, Lohaghat, **Member**
5. Dr. H.C. Tiwari, District Horticulture Officer, Champawat, **Member**
6. Dr. P.S. Bhandari, Chief Veterinary Officer, Champawat, **Member**
7. Mr. Mohan Singh Kunwar, Dy. Programme Director, Jalgam Dept. Champ vat, **Member**
8. Mr. D.K.Tiwari, Thematic Program Executive, BAIF, **Member Secretary**

**C. Linkage development and partnerships:**

Efforts would be made to develop linkages with relevant scientific and technical institutes involved in similar work and aim at networking with likeminded development organizations and programs in North Western Himalayan region like Vivekananda Parvatiya Krishi Anusandhan Sansthan (Almora), G.B.Pant University of Agriculture Technology (Pantnagar), GB Pant Institute of Himalayan Environment and Development (Kosi, Almora), etc. It has close linkages with the Central Institute of Tropical Horticulture, Mukteshwar and Central Soil and Water Research Training Institute, Dehradun. The working relationships have also been developed with local NGOs such as People Science Institute, Himalayan Action Research Centre (HARC), Himalayan Conservation Studies and Conservation Organization HESCO in Dehradun, Uttarakhand Dairy Cooperation Federation etc.

**2.3 Local stakeholder consultations and Initial meetings in the project villages:**

Subsequently a series of village level meetings and focus group discussions were held in the project villages during October 2016 to January 2017 to assess the vulnerability and existing coping strategies as adopted by the hill communities. During these preliminary field visits, it was noticed that climate change and variability are having a direct bearing on the livelihoods of these communities. Considering the type of vulnerabilities, the project activities are proposed to facilitate the introduction of a mix of climate smart technologies (covering

important livelihood resources mainly, water, livestock and vegetation and crop resources) at the household and landscape level.

**Details of the camps conducted are as follows:**

Sr No	Village Name (Camp conducted)	Date	Total Participants	Female Participants
1	Narsingdanda	27/10/16	51	15
2	Tyarson	07/12/16	35	14
3	Tapnival	08/12/16	26	10
4	SuyalKhark	16/12/16	17	02
5	BhagnaBhandari	19/12/16	27	08
6	Dingdai	20/12/16	16	07
7	Khalkandiya	27/12/16	30	04
8	BanjGaon	05/01/17	23	10

**2.3.1 Base line survey of the project villages:** - The Base line survey under the project were undertaken for basic information of participants of like infrastructure, resources, existing livelihood sources, sources of income etc. Such base line survey would be undertaken in all 10 villages.

**2.3.2 Vulnerability assessment and participatory adaptation planning in the project villages:** Using the CRiSTAL and Participatory Rural Appraisal (PRA) tools, a detailed vulnerability assessment work would be completed in each of the 10 villages. PRA tools, such as, timeline, could help in identifying the timeline of climate change in the respective villages in a participatory manner. In the similar manner different PRA tools will also help in understanding the community's risk perceptions with respect to changing climate in the area. During this activity, special focus would be given on vulnerability assessment of the community. Such exercises could provide an open platform to the participating community in identifying the problems/issues and also help in empowering them in decision making to resolve those issues. For each village, one Vulnerability Impact Assessment (VIA) Report would be prepared to capture the exact nature of risks. The information derived from these activities will also help in developing ownership for activities proposed as a part of proposal.

**Subsequently after the inception workshop, vulnerability assessment studies were carried out during December 2016-January 2017. Following tasks were completed as a part of Vulnerability assessment studies:**

1. Understanding relationship between, Exposure, Sensitivity, Adaptability together leading to Vulnerability
2. Anticipated impacts of climate change
3. Climate-related impacts and coping strategies
4. Important resources for livelihoods
5. How resources are impacted by current climate hazards
6. Understood link between Natural Resources Management and Climate Change Adaptation

7. Reviewed and analyzed the results of the climate risk analysis through discussions with different focus groups

Following are the details of the vulnerability assessment exercises conducted in villages with date and number of participants.

<b>Sr No</b>	<b>Village Name</b>	<b>Date</b>	<b>Total Participants</b>	<b>Female Participants</b>
1	Manar	11/12/16	49	27
2	Goshni	13/12/16	32	10
3	SuyalKhark	21/12/16	16	01
4	BhagnaBhandari	23/12/16	34	08
5	Dingdai	23/12/16	18	06
6	Khalkandiya	25/12/16	27	02
7	Narsingdanda	25/12/16	67	21
8	BanjGaon	03/01/17	19	06
9	Tapripal	08/01/17	16	02
10	Tyarsson	10/01/17	23	00

### **3. Project launching workshop:**

The project launching workshop was planned and organized as the first activity under this project. It proved useful to assist the stakeholders to understand and take ownership of the project's goals and objectives, as well as discuss the project's work plans, activities, budget allocations, risks and the proposed monitoring and evaluation plan.

*Following text is a report document of the Workshop.*

#### **3.1 About the project launching workshop:**

A daylong workshop for launching of the new project, "Climate smart actions and strategies in North Western Himalayan region for sustainable livelihoods of agriculture-dependent hill communities" was held jointly by BAIF and NABARD –Regional Office, Dehradun on November 16<sup>th</sup>, 2016 at district Champawat in the state of Uttarakhand.

#### **3.2 Agenda and Participants**

The main goal of this 4 year's project is to improve the adaptive capacity of rural small and marginal farmers including hill women in North Western Himalayan region to respond to climate change. This is to be achieved by introducing a combination of Climate Smart Farming Technologies along with required social engineering and capacity building processes. The project also envisages creating field-based evidence of climate resilient strategies and approaches in mountain ecosystems

#### **3.3 Proceedings of the workshop held on 16<sup>th</sup> November 2016**

**Mr. D.N. Magar**, Chief General Manager, NABARD- Regional Office- Uttarakhand formally announced launching of this project in Champawat, in 10 villages of Pati and Lohaghat blocks which will be implemented by BAIF and Monitored by NABARD. He also highlighted that the project in Himalayas is one amongst the only five projects that stands approved under Adaptation Fund support to India.

**Shri. Bharat Kakade**, Senior Vice President of BAIF, in his speech elaborated on need to adopt Climate smart development interventions by development agencies to be able to build resilience and reduce vulnerability of communities. He also gave brief overview of work already initiated by BAIF in India and in the state of Uttarkhand.

**Shri Jugal Kishor**, AGM – NABARD, advised the project team to study the needs of the communities before finalizing the action plan. He urged BAIF to make the project participatory and inclusive in nature. He also stressed on the need to blend local knowledge with scientific technology

Many expert scientists from reputed institutes, state agriculture universities, Krishi Vigyan Kendra, special purpose research foundations such as, VPKAS, CITH Mukteshwar , DCFR Champawat, other ICAR institutes, government officials from all relevant line departments and district administration, concerned departments , subject matter specialists , academicians and likeminded NGO representatives and community representatives from around 10 project villages were present for this workshop and also took active part in the discussions held during the workshop .

**Dr. A.K. Srivastava**, Prof. Emeritus and Ex. Director, VPKAS, discussed on the variety of effects of climate changes on hill agriculture during recent times. He focused on changes in crop pattern, rainfall, soil, crop productivity, shifting of crops from lower to higher altitudes and need to adopt climate smart farming systems in hilly regions. He suggested adopting practices such as, protected cultivation of high value crops, water harvesting, and fodder development, reduction of drudgery in women, diversified farming system and introduction of indigenous / improved varieties of crops in hills.

**Devi Dutt Joshi**, Progressive Farmer from Village - Suyalkhark, shared his experience on the changing climate. As per his opinion, the area has witnessed irregular rainfall, water shortage, change in crop pattern, reduced crop productivity, rising temperatures and deforestation in the last few years. While appreciating the work done by BAIF previously on cattle development in this region, he said that he is looking forward for this new project.

**Priyanka Verma** (SHG Head, Goshni), mentioned the benefits of a SHG. Highlighting the need of women empowerment in the villages, she suggested to start more groups to mobilize women.

**Dr Raj Narayan**, Principal Scientist (CITH), gave his valuable suggestions on introducing new horticulture crops like Kiwi and low chilling varieties of Apples. He also suggested using high density plantation systems and inter-cropping methods to get high production.

**Dr M P Singh**, Senior Scientist (KVK, Lohaghat), mentioned about technologies tested by KVK for the hilly regions. He suggested using protected cultivation, water harvesting, mulching, application of FYM, use of bio-pesticides and fungicides and value addition of produce.

**Shri H C Tiwari**, District Horticulture Officer (D.H.O), highlighted the impact of climate change on local communities and horticulture based activities. He suggested crop pattern should be changed as per clusters. Organic farming can be promoted.

**Dr P S Bhandari**, Chief Veterinary Officer (C.V.O), mentioned of the new diseases seen in animals due to the changing climate. He also suggested to promote livestock indigenous to the hilly region.

Post the discussion, **Mr. Puneet Nagar, DDM – NABARD, Pithoragarh** extended a vote of thanks to all the participants and dignitaries . He also reiterated the need and urgency to have such program in Champawat, which is identified as a vulnerable region as per recent CDKN and Forest Department survey report. He also highlighted the need to plan interventions by considering the commercial and economic aspects

The workshop also gave an opportunity to sensitize media and many other stakeholders aware about the emerging threat of climate change in North Western Himalayas and need to have a development program for reducing the vulnerability of agriculture dependent hill communities.

The workshop helped in sharing the need and rationale and vision on the climate adaptation actions in North Western Himalayas, sharing of the project plan and expected outcome in Himalayan region. More importantly the workshop helped in understanding the kind of work ongoing by many organizations on climate change adaptation. The interactions amongst the participants helped in further exploring the areas of collaboration, research and cross learning and sharing!

#### **Workshop Agenda:**

10.00 - 10.30: Registration

10.30 - 10.45: Welcome by BAIF head, Uttarakhand

10.45 - 11.00: Self introduction by participants

11.00 - 11.15: Formal Inauguration and speech by CGM NABARD, Shri D.N  
MAGAR NABARD, DDN-RO

11.15 - 11.30: Overview of BAIF's initiatives in Climate Change Adaptation – Mr.  
Bharat Kakade, Senior Vice President,, BAIF

11.30 – 12.00: About the proposed Climate Change Adaptation program by Dr  
Rajashree Joshi,BAIF

12.00 12.30: Possible development interventions in North Western Himalayas: Dr.  
Anil Srivastava, Prof Emeritus and Ex Director VPKAS, Almora

12.30-12.45: Expression of views by AGM, Dr.Jugal Kishorji –NABARD: RO

12.45- 13.45: Formal sharing by representatives of various institutions about the  
available expertise and technology options for adaptation

14.30 to 15.30: Discussions and Concluding led by NABARD

Vote of thanks: DDM, NABARD

## Invitation letter for launching workshop

November 4<sup>th</sup>, 2016

Dear Sir,

**Sub:** Invitation for Launching of NABARD-BAIF Climate Change Adaptation Programme in Uttarakhand

### Greetings from BAIF!

A new project on, " Climate smart actions and strategies in North Western Himalayan region for sustainable livelihoods of agriculture-dependent hill communities' 'has been recently approved to BAIF-Uttarkhand under NABARD-AFB programme support.

A launching workshop of the project has been planned jointly by NABARD and BAIF on **Wednesday, 16th November 2016** at **Champawat**.

**The Venue:** Hotel - Sea Hawk Inn , Ladwal estate ,  
Govt. Girl Inter college road (GGIC) Champawat  
Near Zila Panchayat Bhawan,  
Contact: 09690552832, 08958509489

The objectives of workshop include:

1. Sharing of project plan and expected impact of the NABARD-BAIF project with the key stakeholders, scientists, Govt. departments, Climate Change knowledge centers, NGOs and experts in Himalayan region.
2. Seek support for achieving the project goal through knowledge partnerships and convergence
3. Formally announce and launch the project for a cluster of villages in Champawat district of Uttarakhand

### *Details of workshop programme and project profile is enclosed herewith.*

Being an important stakeholder in the area of climate change, your participation and contributions in the workshop will be of immense help for the programme as we believe that this will help setting required direction. Hence, I take opportunity to invite you for the workshop. It will be our great privilege to have you for this workshop. We would like to have you attend the Workshop. However, if pre-engagements make it difficult for you to attend personally, do depute a senior officer to participate and share the work of your organization.

It will be our privilege to arrange for your to and fro travel (At actual by Train / Road).

Look forward to receive your affirmative reply.

Best regards

**Bharat Kakade**  
**Sr. Vice President**  
**CC: CGM NABARD, Dehradun,**

Encl- Workshop programme venue, schedule and project profile is attached with this letter

## Participant's list

Inception workshop under Climate change project organized by BAIF Development Research Foundation and NABARD at District, Champwat Uttarakhand

Place: - Hotel SEA HAWK INN

Date -16/11/2016

## Invited guests

S.N.	Name of Guest	Name of Organization	Designation
1	Shri D.N.Magar	NABARD	C.G.M.
2.	Shri Jugal Kishore	NABARD	A.G.M.
3.	Shri Hemant Verma	District Administration	A.D.M.
4.	Shri Puneet Nagar	NABARD	D.D.M.
5.	Shri H.C.Tiwari	Horticulture Department	D.H.O.
6.	Dr. P.S.Bhandari	Animal husbandary	C.V.O.
7.	Shri Manoj Pandey	Disater Mgt	D.D.M.O.
8.	Shri N.S.Bisht	Information	D.I.O.
9.	Shri S.C. Joshi	Amarujala	Reporter
10	Shri Dinesh Singh Bisht	News StateUp/Uttarakhand	Jurnalist
11.	Dr. Anil Kumar Srivastava	ICAR/BAIF	Ex Dirrektor VPKAS Almora
12.	Dr. Anil Kumar	CITH Mukteswar	Scientist pathology
13	Dr. Rajnarayan	CITH Mukteswar	SIC ,Scientist
14.	Raja Aadil	DCFR	Scientist
15	Parvaiz Ahmad	DCFR	Scientist
15	Shri K.V. Sharma	ILSP	Agri /Horti officer
16	Shri A.S. Rawat	SBI	L.D.M.
17	Shri N.D. Joshi	SBI RSETI	Dirrektor
18.	Shri Vikram Chand	DCB	Manager
19	Shri M.S. BHandari	DCB	D.G.M.
20	Shri G.S. Rana	D.C.B.	S.B.M.
21	Dr, Sunil Pandey	NIDHI (NGO)	Director
21	Dr. Jeewan Joshi	SAMBANDH (NGO)	Director

## Farmer Participants

S.N.	Name of Farmers	Name of G.P
1.	Mahesh Chandra Joshi	Suyalkhark
2	D.D. Joshi	Suyalkhark
3	Prakash chandra	Suyalkhark
4	Jitendra Taragi	Punawe
5	Hema Devi	Goshni
6	Munni Bohra	Goshni

7	Priyanka Verma	Goshni
8	Reeta Bairagi	Goshni
9	Pratibha Kumari	Khetikhan
10	Bikram Singh	Tyarsu
11	Durga Dutt Kharkwal	Khark
12	Bhairav Lal Verma	Goshni
13	Gopal Singh Manral	Manar
14	Shankar Lal Verma	Goshni
15	Mahesh Chandra Dictiya	Tapnipal
16	Naresh Chandra Dictiya	Tapnipal
17	Naveen Kalkhuriya	Goshni
18	Sndhiya Tiwari	Suyalkhark
19	Hem Kharkwal	Bhageen Bhandari
20	Yogesh Kharkwal	Khalkaniya
21	Mukesh Raj Deopa	Manar
22	Sanjay Kharkwal	Khalkaniya

### **BAIF representatives**

Inception workshop under Climate change project organized by BAIF Development Research Foundation -Champwat Uttarakhand

Place: - Hotel SEA HAWK INN

Date -16/11/2016

<b>S.N.</b>	<b>Name of Guest</b>	<b>Name of Organization</b>	<b>Designation</b>
1	Shri B. K. Kakade	BAIF	Senior Vice President
2.	Shri R. M. Shukla	BAIF	A.C.P.E.
3.	Dr. Rajshree Joshi	BAIF	T.P.E.
4.	Shri D. K. Tiwari	BAIF	Dy. C.P.E
5.	Dr. Dinesh Raturi	BAIF	Project Officer
6.	Shri Pushkar Singh Bisht	BAIF	Project Officer
7.	Shri K.K.Bagoli	BAIF	A.P.O.
8.	Shri D. S. Dumaga	BAIF	B.P.O.
9.	Shri M.S. Bisht	BAIF	Programme Operator/CDC
10	Shri Bhuwan Chandra	BAIF	Programme Operator/CDC
11.	Shri Bhim Singh	BAIF	Trainee/CDC
16	Shri Bhaskar Karnatic	BAIF	Trainee/CDC
17	Shri Aadarsh Krishnan	SBI Fellow	SBI Fellow
18	Anvi Mehta	SBI Fellow	SBI Fellow

**PHOTO GLIMPSES OF LAUNCHING WORKSHOP AT CHAMPAWAT**



# **4. Media Coverage of the launching workshop**

**November 16th, 2016 at district Champawat in the state of Uttarakhand**

# बढ़ते तापमान से पहाड़ में बागवानी व कृषि प्रभावित

संवाद सहयोगी, चम्पावत : बायफ डेवलपमेंट रिसर्च फाउंडेशन द्वारा नाबार्ड के सहयोग से 'क्लाइमेट स्मार्ट एक्शन एंड स्ट्रेटीजिक इन नार्थ वेस्टर्न हिमालयन रीजन फार सस्टेनबल लाइवलीहुड ऑफ एग्रीकल्चर डिपेंडेंट हिल कम्युनिटी' विषय पर कार्यशाला आयोजित की। जिसमें पहाड़ में लगातार बढ़ते तापमान पर चिंता जताई गई।

कार्यशाला में वैज्ञानिकों ने कहा कि हिमालयी क्षेत्र के वातावरण में तेजी से हो रहे बदलाव पर अध्ययन किया जाएगा। जितनी तेजी के साथ हिमालयी क्षेत्र में बदलाव हो रहे हैं, वह चिंतनीय है। पर्वतीय क्षेत्र का तापमान आधा डिग्री सेल्सियस तक बढ़ गया है। वैज्ञानिकों ने बताया कि इसका अध्ययन कर रिपोर्ट सरकार को भेजी जाएगी। हिमालयी क्षेत्रों में वातावरण में बदलाव से कृषि तथा बागवानी पर इसका असर है। उत्तर

पश्चिमी हिमालय क्षेत्र के मौसम में तेजी से हो रहे बदलाव के कारण पारंपरिक कृषि एवं बागवानी पर पड़ रहे प्रभाव को कम करने के लिए वातावरण अनुसार आजीविका के संसाधनों को बढ़ावा देना होगा। ताकि पहाड़ों से हो रहे पलायन को रोका जा सके। योजना का मुख्य उद्देश्य विभिन्न पारंपरिक फसलों, पेड़-पौधों एवं मवेशियों को ध्यान में रखते हुए भौगोलिक एवं जैविक विविधता के अनुरूप क्षेत्रों की विविधता के आंकड़ों को एकत्र कर आजीविका एवं विकास के अनुकूल उत्पादन प्रणालियों का समुचित विकास करना है। कार्यशाला का संचालन कार्यक्रम संयोजक डीके तिवारी ने किया। इस अवसर पर हेमंत वर्मा, सीजीएम नाबार्ड डीएन नागर, एजीएम नाबार्ड जुगल किशोर, उपाध्यक्ष बीएआईएफ भरत काकड़े, राज्य मुख्य कार्यक्रम संयोजक आरएम शुक्ला, डीएचओ एचसी तिवारी आदि मौजूद रहे।

Newspaper: - Dainik Jagran Haldwani dated 18/11/2016

# रिसर्च फाउंडेशन और नाबार्ड की कार्यशाला

चम्पावत। बायफ डेवलपमेंट रिसर्च फाउंडेशन और नाबार्ड के सहयोग से क्लाइमेट स्मार्ट एक्शन एंड स्ट्रेटीजिक इन नार्थ वेस्टर्न हिमालयन रीजन फार सस्टेनबल लाइवलीहुड ऑफ एग्रीकल्चर डिपेंडेंट हिल कम्युनिटी विषय पर एक दिनी कार्यशाला आयोजित की गई। रिसर्च फाउंडेशन के वरिष्ठ उपाध्यक्ष भरत काकड़े ने कार्यशाला के उद्देश्यों पर प्रकाश डालते हुए बताया कि पर्वतीय क्षेत्र के वातावरण में तेजी से हो रहे बदलाव को देखते हुए बायफ डेवलपमेंट रिसर्च फाउंडेशन वैज्ञानिकों के माध्यम से इसका अध्ययन कर रिपोर्ट सरकार को भेजेगी।

डॉ.राजश्री जोशी ने बायफ के संबंध में कहा कि इसमें मुख्य उद्देश्य देश के 15 राज्यों के 150 जिलों में अच्छी नस्ल की गायों का विस्तार करना है। कार्यशाला के संचालन उपमुख्य कार्यक्रम संयोजक डीके तिवारी ने किया। इस अवसर पर एजीएम हेमंत कुमार वर्मा, सीजीएम नाबार्ड डीएन नागर, एजीएम जुगल किशोर, मुख्य कार्यक्रम संयोजक आरएम शुक्ला, जिला उद्यान अधिकारी एचसी तिवारी आदि उपस्थित थे। ब्यूरो

Newspaper: - Amar Ujjala dated 17/11/2016

# कार्यशाला में बदलते वातावरण पर जताई चिंता

## आयोजन

चम्पावत | हमारे संवाददाता

बुधवार को चम्पावत में बायफ डेवलपमेंट रिसर्च फाउंडेशन ने नाबार्ड के सहयोग से क्लाइमेट स्मार्ट एक्शन एंड स्ट्रेटीजिक इन नार्थ वेस्टर्न हिमालयन रीजन फार सस्टेनबल लाइवलीहुड ऑफ एग्रीकल्चर डिपेंडेंट हिल कम्युनिटी विषय पर कार्यशाला का आयोजन हुआ। रिसर्च फाउंडेशन के वरिष्ठ उपाध्यक्ष भरत काकड़े ने कार्यशाला के उद्देश्यों पर प्रकाश डालते हुए कहा कि पर्वतीय क्षेत्र के वातावरण में तेजी से हो रहे बदलाव को देखते हुए बायफ डेवलपमेंट रिसर्च

फाउंडेशन ने वैज्ञानिकों के माध्यम से इसका अध्ययन कर रिपोर्ट सरकार को भेजी जाएगी। वरिष्ठ उपाध्यक्ष ने कहा कि यूनाइटेड नेशन और भारत सरकार आठ विषयों पर शोध कर रहे हैं, जिसमें हिमालयी क्षेत्र के वातावरण में तेजी से हो रहे बदलाव पर भी अध्ययन किया जाना भी शामिल है। उन्होंने बताया कि जितनी तेजी के साथ हिमालयी क्षेत्र में बदलाव हो रहे हैं। उन्होंने कहा कि यहां का तापमान आधा डिग्री तक बढ़ गया है जिसके लिए हम तैयार नहीं हैं और इस ओर प्रयास भी कम हो रहे हैं। उन्होंने बायफ के सम्बन्ध में कहा कि इसका मुख्य उद्देश्य देश के 15 राज्यों के 150 जनपदों में अच्छी नस्ल की गायों का विस्तार करना है, लेकिन हिमालयी क्षेत्र के तेजी से बदलते वातावरण को देखते



चम्पावत में बुधवार को बायफ और नाबार्ड ने कार्यशाला का आयोजन किया। • हिन्दुस्तान

हुए इस क्षेत्र में भी कार्य किये जाने का प्रयास किया जा रहा है। इस अवसर पर अपर जिलाधिकारी हेमन्त कुमार वर्मा,

सीजीएम नाबार्ड डीएन नागर, एजीएम नाबार्ड जुगल किशोर, उपाध्यक्ष बीएआईएफ भरत काकड़े आदि थे।

Newspaper: - Hindustan Times, Haldwani dated 17/11/2016

## 5. Initial meetings related to project

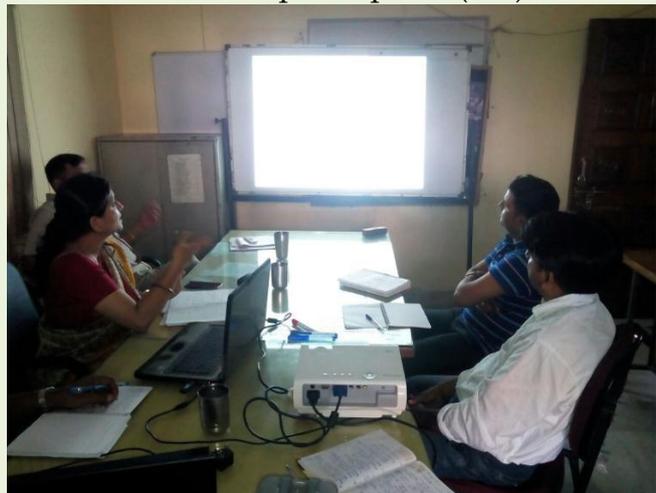
(With BAIF Uttarakhand project staffs and with NABARD – R.O. Dehradun Staff)

**Period: 14th Aug- 20th Aug, 2016**

Meeting was held at BAIF's Uttarakhand office to develop Project clarity, to plan inception planning workshop with the multiple stakeholders and to prepare year 1 action plan + budget including preparatory work in the project villages

**Points discussed during the meeting are as under:**

1. The CC project activities should be built further and should be strengthened using the existing base/ work of SDP I + II, DST- Silvi pasture work in Vanpanchayat lands and CDC -Services ongoing in proposed 10 CC project villages of Champawat.
2. Component wise strategy to be written down.
3. The clarity on activity wise contribution (in kind/ cash) if any, to be written down and to be formalized in consultation with senior management at BIRD- UP / BAIF NORTH
4. Any decision regarding sustainability fund, if any to be discussed first and then formalized in consultation with senior management of BIRD- UP / BAIF NORTH
5. The SDP work + DST silvipasture work and relevant CBOs to be involved actively to extend the learnings and for exposure of remaining villages (Concept of Lok Prabodhini for ToT and exposure)
6. The services of existing progressive farmers and CRPs to be planned in CC project
7. The baseline survey, mapping of existing activities, potential mapping etc. to be done to identify gaps and scope for interventions and for selection of participants (800)
8. As far as possible convergence should be aimed at with ongoing government schemes in the area such as, JALAGAM, NREGS, Agriculture department, AAJIVIKA, Forest-Vanpanchayat etc.
9. Clear partnership to be explored with existing Dairy network in the state, other likeminded NGOs such as HESCO, PSI and ICAR institutes having similar mandate
10. Entire staff should be in place from first phase itself. both at cluster level for proposed implementation and at the DDN level to coordinate with NABARD



Explaining project to BAIF Uttarakhand team

A meeting was also held with NABARD team headed by CGM at Dehradun along with other officials of Uttarakhand to discuss about the scope of the project and to develop clarity for joint project implementation

**Points discussed are as under:**

1. Scope of newly approved proposal, budget, duration could be discussed with CGM, Mr. Magar and his senior colleague.
2. PPT Presentation on sanctioned project and all related aspects could be made in front of entire NABARD- RO team of officials.
3. The point on inception workshop to be jointly organized by BAIF and NABARD was discussed. The place of such workshop was agreed as place in district Champawat only as all district level government officials and village representatives would be able to attend such meeting then. The date is tentatively agreed as first week of October. But this will be finalized depending upon availability of senior management of NABARD, BAIF and expected Chief Guest. The cost of this to be borne by BAIF, which is already approved. The list of invitees and invitation letter, brief note explaining proposal scope to be prepared by BAIF team and then jointly to be finalized with NABARD. The venue to be fixed by BAIF team in consultation with DDM- Pithoragadh
4. There will be one nodal officer from NABARD 's side. CGM clarified that DDM- Pithoragadh and one DGM from DDN -RO will be contact persons for this project. However, BAIF requested that this should be formally communicated so that line of communication would be clear (Unfortunately, both of them were absent during this meeting)
5. Discussion was also held on proposed M& E systems and areas requiring M& E. The discussion was also held on likely invitees for project level steering committee, technical advisory committee and roles and responsibilities of BAIF and NABARD in that were discussed. CGM has promised to look into this soon.
6. Purchase procedures and approved terms and conditions could be discussed
7. All the documents + PPT on project to be shared with concerned officials at District level too (Action: BAIF Uttarakhand team)



**First Meeting at NABARD Dehradun Office**

## **6. Meeting report of the first meeting with concerned stake holders of the project at Champawat held on 22/09/2016 at District head quarter, Champawat.**

The meeting was held with many stakeholders in the district Champawat by BAIF team at Uttarakhand. The meeting was held under the chairmanship of Chief Development Officer.

The following officers were present for the meeting:

- 1- District Agriculture Officer
- 2- District Horticulture officer
- 3- Chief veterinary officer
- 4- District Development Manager NABARD
- 5- Project Director
- 6- Assistant Project Director
- 7- District Development officer
- 8- District Manager Dairy (Anchal)
- 9- District Forest Officer
- 10- Program Director Jalagam
- 11- Lead Bank manager
- 12- Mr. R.M. Shukla A.C.P.E (BAIF)
- 13- Mr. D.K.Tiwari Dy. C.P.E (BAIF)
- 14- Dr.Dinesh Raturi Project- Officer (BAIF)
- 15- Mr.K.K.Bagauli A.P.O. (BAIF)

**During this meeting a presentation was presented by Mr. D.K. Tiwari, Dy C.P.E. BAIF regarding Climate change project Khetikhan Dist -Champawat -U.K. following point has been discussed: -**

1. Introduction of BAIF and working progress in Uttarakhand
2. Introduction of climate change project and their objective
3. Introduction of project location in Dist Champawat
4. Discussion regarding need of farmers of this project
5. Output and outcomes of project and linkage development and partnership under project.
6. Discussion about project activities which will help to vulnerable families for sustain livelihood under hill area condition.

**During this meeting following suggestions were received from the officials: -**

1. All District level officers from the line department including CDO Champawat has appreciated this project and gave assurance to provide required help.
2. DDM NABARD has suggested to including income base data during base line survey of beneficiaries for comparative end of the project.
3. CDO has suggested for activity linkage with concerned department for more coverage of the project beneficiaries
4. CDO Champawat has suggested to introduce the improved variety of Pear and Kiwi under horticulture based activity.
5. DDM NABARD has suggested linkage CBO's with bank for credit for income based activities.
6. DDM NABARD also suggested introduced the Azolla cultivation under fodder promotion activity.
7. DDM NABARD has suggested generating the corpus fund for maintaining the activity after end of the project.



The meeting was helpful to get the commitment of all line department officials.

# **7. Exposure Visits**

## 7. Exposure Visits for the villagers as conducted under BAIF Climate Change Adaptation Program dated – 28/12/2016

Participants from villages like BhagnaBhandari (12) and Khalkhandiya (7), including 10 women

### Locations visited:

1. **Silvi Pasture** – The forest developed by villagers of Mannar with the support of BAIF under the DST & SDP project. The villagers of Mannar spoke about how the barren land was converted into a dense evergreen broad leaf forest within 5 years. The water availability has increased since then as ground water level has increased and for additional percolation trenches and pits were made in this forest. The villagers added that the forest cover has helped increase fodder trees thereby reducing women drudgery in walking far away for fodder and fuel. As afforestation is a major part of the Climate Change Adaptation Project, the participants in the exposure visit were motivated to replicate the same in the Van Panchayats of their respective villages.



2. **Rain Water Harvesting Tank** – A Rain water Harvesting (RWH) tank constructed in Mannar was shown to the participants. Benefits of the RWH tank were told to the participants. The beneficiary, Sarpanch Village Mannar, Smt Bhagirathi Devi, shared her experiences along with the participants. Earlier, there were problems of water for irrigation and daily use, especially during summer season. But, after installing RWH tank to harvest rain water, there is enough water available for domestic and irrigation use.



3. **Bamboo based low cost Polyhouse** - In Mannar, participants were introduced to the bamboo based low cost poly house installed by BAIF. Participants saw the benefits of a poly house where annually 35 to 40 thousand income is generated by farmers. Poly house has facilitated in 3 crops every year and have improved vegetable crop production. Because of climate change, traditional crop yields are dropping. The intervention of poly house has helped in generating incomes through alternative crops.



4. **Smokeless Chullahs** – Majority of the participants use chullahs at home, which has adverse effects on both health and environment. The beneficiaries of smokeless chullah shared their experience with the participants. The smokeless chullahs not only have negligible emissions in the atmosphere but also have no adverse effects on the health of the users.



5. **Mini Apple farm** – Participants were shown the different apple species, wheat species, peach, apricot and grape varieties being tried by BAIF. They were given information on how to develop an orchard, manure applications, disease management, cultural operations for example weeding, pruning, cleaning, training, etc.



6. **Knitting and Croatia** – The 10 women participants were shown the knitting and Croatia unit at Khetikhan. The SHG women who are part of the knitting and Croatia unit shared their experiences with the participants. These women were told about how to knit with good finishing, how to maintain log books and how to distribute money

through SHG's. The participants showed keen interest and requested for a thorough training program to enable them to set up a mini center in their respective villages.

7. **Water tanks and distribution in Kapadi (Goshani) village**–BAIF has water conservation and tapping project in Kapadi village. As majority of the villages face storage and distribution problem, the participants were shown how this can be done with collective efforts.



**Conclusion** – The participants were motivated and happy after seeing the different interventions. They are inspired to replicate these interventions in their villages.

**BAIF members present during the visit:**

Dr D.P. Raturi (Project Officer)

Pushkar Bisht (Project Officer)

D.S. Dumaga (BPO)

M.S. Bisht (Sr.P.O.)

Bhim Singh Bisht (Trainee)

Anvi Mehta (SBI Fellow)

Adharsh Krishnan (SBI Fellow)

Following participants were presented in the local exposure visit.

क्र.सं.	नाम	ग्राम पंचायत	मो.नं.	हस्ताक्षर
1	हेमंगरसाडा	बबलकडिया	975611158	hem
2	मुनेश खर्कल	"	8954724232	मुनेश
3	दीपक खर्कल	"	735574424	दीपक
4	रवींद्र चंद्र	"	9758324414	रवींद्र
5	केलाश चंद्र जोशी	"	9720483182	केलाश
6	Ramesh Chandra	-	8057257210	Ramesh
7	श्रीशंकर	-	9859327982	श्रीशंकर
8	Sanjay Kumar	भगना मण्डारी (खेत)	9761354342	Sanjay
9	ज्योति	भगना मण्डारी	8171165309	ज्योति
10	सुनीता जोशी	खेतार नरियाल	8650651284	सुनीता
11	गीता टवटा	भगना मण्डारी	97593587522	गीता
12	ममता देवी	खेतार नरियाल	9012944315	ममता
13	हेमा देवी	खेतार नरियाल	708816788	हेमा
14	निर्मला देवी	भगना मण्डारी	8199756363	निर्मला
15	पुष्पा देवी	भगना मण्डारी	7791199051	पुष्पा
16	गीता देवी	खेतार नरियाल	9756704640	गीता
17	निर्मला देवी	खेतार नरियाल	7088364601	निर्मला
18	ज्योति जोशी	खेतार नरियाल	9627894198	ज्योति
19	पुष्पा देवी	भगना मण्डारी		
20	श्रीशंकर	सर्दीयाँ	8851467742	श्रीशंकर

Dr. Dinesh Raut  
08-6-79  
edckhetar

(Dr. Dinesh Raut) Project Officer  
R&F CEP

Dr. Dinesh Raut  
R&F CEP

Dr. Dinesh Raut  
R&F CEP

## 8. Other project specific activities completed in project villages subsequently:

As a part of field level introduction of climate smart actions, following work could be accomplished in first quarter .

1. **Artificial Insemination** - During the period from October to December 2016, the number of AI achieved are as follows:  
Khetikhan Centre - 107  
Laluwapani Centre - 40
2. **Poly houses** - under this activity, we have selected 30 beneficiaries for protective improve vegetable cultivation under low cost poly house some of farmers are 20 no's selected for replace of poly sheet so overall 50 farmers has selected under said activities
3. **Water Resource Development** - Three sites have been identified for water resource development and spring recharge. The sites selected are two in Narsingdanda and one in Suyalkhark. The community is ready to form a JalSamiti, work on which is in progress. Currently work is ongoing to mobilize the community for formation of Jal Samiti and plan work on Spring recharge.

### **Specific tasks completed includes:**

1. Identification process (measurement of flow, quality, dependency, etc) for two sites
2. First meet for Jal Samiti to decide on problems, solutions and everyone's role.
3. A meeting to act as an ice breaker for villagers to co-operate and work together
4. Preliminary feasibility survey completed using formats . Some of the identified leads are listed below:

- Recharge of spring using afforestation/percolation pits and boundaries across fields
- Provision of Rain Water Harvesting Tanks for beneficiaries
- Increasing lake area to ensure water does not run off
- Provision of Hand Pump
- Well and motor to lift water
- Repair of already existing check dams and construction of collection cum filtration tank
- Repair of missing pipes (1 inch pipeline) for tanks to start it again

4. **Self Help Groups (SHG) - 6 SHG's formed newly at different villages**

Following collaboration possibilities have been identified:

- KVK Lohaghat linkage for protective cultivation.
- CITH Mukteshwar linkage for temperate fruit plantation.
- VPKAS linkage for quality input material and training on different activities.
- All line Department of District Champawat like Animal Husbandry, Horticulture Agriculture, Jalagam, CDO and DM office.

# 9. Photo glimpses

## Field activities: Photo glimpses



Site visit to assess the situation of Springs in region



Meeting in village to form Jal Samiti



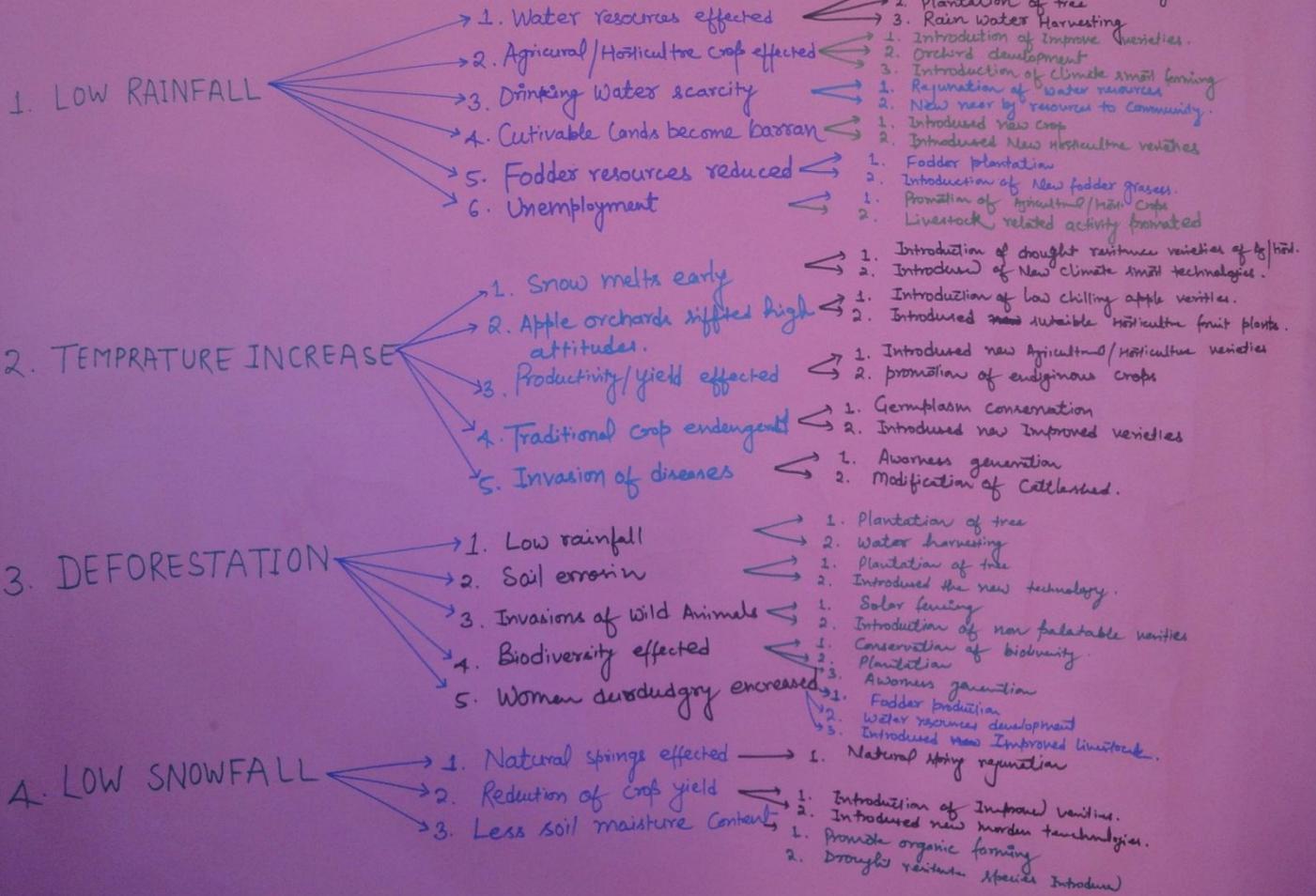
Village level meetings and exposure visits



## HAZARDS

## IMPACTS

## COPING STRATEGIES



## VILLAGE-MANAR

Vulnerability assessment exercises in project villages

# **Annexure**

# Power Point Presentation Covering Scope of Project and Project Impacts of

## AFB-NABARD-BAIF Climate Change Project

### **Title of the project :** **Climate Smart Actions and Strategies In North Western Himalayan Region for Sustainable Livelihoods of Agriculture-dependent Hill Communities**

**Implementing Entity:** National Bank for Agriculture and Rural Development (NABARD) Climate Change vertical HO and RO office Dehradun

**Executing Entity:** BAIF Development Research Foundation –HO and Uttarakhand Team

**Linkages and partnerships with Government and Other premier hill research institutes**

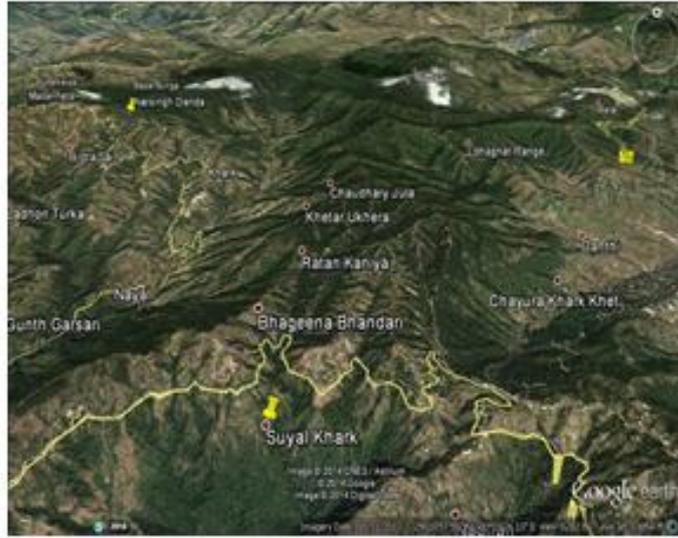
**Project duration : 4 Years from year 2016– 2020**

### **Livelihood and Climate Change Context of Uttarakhand**



# Project location

Cluster of 10 villages / gram panchayats of 3 blocks (Champawat, Pati, Lohaghat) of **district Champawat in Kumaun**



Particulate	Khalkariya	SuyalKhark	Digdei	Bhageena Bhandari	Narsingh Danda	Tapnipi	Goshani	Tyars hun	Manar Malle	Bengeon
Block	Champawat	Champawat	Champawat	Champawat	Champawat	Pati	Pati	Pati	Pati	Lohaghat

## Impacts of Climate Change:

## Seen effects of CC in Uttarakhand

Specific Changes	Specific adverse effects
<p><b>Rising temperature</b></p> <p>The region has experienced an increase in maximum temperature up to 1 degree Centigrade</p>	<ul style="list-style-type: none"> <li>▪ Apple orchards shifting towards higher altitude seeking lower temperatures</li> <li>▪ Increased vulnerability of agri-horti sectors and absence of any other livelihood options leading to migration of productive labor.</li> <li>▪ Upward shift in various climatic zones with slight rise in temperature</li> <li>▪ Altered cropping patterns</li> <li>▪ Day-to-day and medium-term planning of farm operations is becoming more difficult</li> <li>▪ Greater losses in winter crop as compared to rainy season crop</li> <li>▪ Changes in phenology/composition of species</li> <li>▪ Increase in pests and diseases</li> <li>▪ Decline in the production of wheat and potato and consequent adverse impact on food security</li> <li>▪ Degradation of soil and declining soil moisture due to increased heat stress and early snow melting</li> <li>▪ Decline in availability of fodder and its adverse impact on animal husbandry</li> <li>▪ Reduction in local crop diversity</li> </ul>

Specific Changes	Specific adverse effects	
<ul style="list-style-type: none"> <li>• <b>Changed precipitation conditions</b></li> <li>• Winter precipitation in the form of snow fall has declined over the years</li> <li>• Warmer and shorter winters with less snowfall</li> <li>• Delayed onset of rains during monsoon</li> <li>• Decrease in scattered light rainfall that was useful for percolation and an increase in intense rainfall, but which destroys crops and speeds up runs off.</li> <li>• Overall less and more erratic rainfall.</li> <li>• Less or absent winter rains</li> <li>• Increased frequency of intense rainfall events</li> </ul>	<ul style="list-style-type: none"> <li>• Decrease in water availability in the streams and rivers in summer due to decreased snow fall</li> <li>• Increased run-off, less infiltration and loss of surface soil on steeper mountain slopes which would accelerate the rates of siltation and flash floods</li> <li>• Increased run-off coupled with removal of forest cover, have already started showing signs of depleted hill aquifer regime</li> <li>• Overall decreased water availability</li> <li>• Streams and springs that used to act as the lifeline of the mountain communities by providing much needed water for drinking and agriculture during dry spells, are drying up</li> <li>• Decline in soil moisture hampering crop cultivation</li> </ul>	<ul style="list-style-type: none"> <li>• Water availability becoming crucial issue posing challenge to agriculture and livestock</li> <li>• Drinking water sources are getting reduced thus adding to drudgery of women</li> </ul>

Specific Changes	Specific adverse effects	
<b>Extreme weather events</b>	<ul style="list-style-type: none"> <li>• Intense rainfall coupled with deforestation, sloping terrain and loose soil leading to soil erosion and loss of fertile soil, thereby making agriculture impossible</li> <li>• Land degradation and loosening of soil</li> </ul>	
<b>Sudden events leading to total loss of crops and property</b>	<ul style="list-style-type: none"> <li>• Sudden weather events like hail storm in 2009 and resultant crop losses</li> <li>• Cloud burst in June 2013, resulting in major devastation</li> <li>• Increased instances of landslides compared to the past</li> </ul>	
<b>Land and soil degradation due to intense rains</b>	<ul style="list-style-type: none"> <li>• Increase in human-animal conflicts</li> <li>• Increased pressure on forests resulting into decline of biodiversity</li> </ul>	
<b>Temperature variations</b>	<ul style="list-style-type: none"> <li>• Proliferation of invasive species</li> <li>• Increased requirement for feed supplements for livestock</li> <li>• Fodder scarcity and resultant drudgery for women</li> </ul>	

Main Problems identified	Suggested Technology Solutions
<input type="checkbox"/> <b>Eroding base of the agro biodiversity and diverse landraces</b> (mainly, niche crops and sturdy and nutritious millets of the hills) Ex: <i>Manhua</i> (finger millets), <i>ramdana/chua</i> (amaranthus), <i>rajma</i> (common kidney beans), <i>ogal</i> (buckwheat), <i>urad</i> (green gram), <i>moong</i> (black gram), <i>naurangi</i> (mix of pulses), <i>gahath</i> (horsegram), <i>bhar</i> (soybean), <i>lobhna</i> (French beans), <i>kheera</i> (cucumber)	<input type="checkbox"/> Participatory conservation and characterization of indigenous pulses & millets (native varieties) <input type="checkbox"/> Establishing community seed banks for conservation and multiplication <input type="checkbox"/> Live trials for production enhancement, multiplication and pure seed production <input type="checkbox"/> Improved market services for producers and buyers
<input type="checkbox"/> <b>Absence of scientific and farmer friendly weather data service and reach of weather based crop advisory</b> services in a region there by increasing community's vulnerability	<input type="checkbox"/> Linkage development and increased partnership with local research and scientific institutes in a region for required technical inputs
<input type="checkbox"/> <b>Absence of crop diversification efforts</b> due to absence of techno-managerial inputs and lack of knowledge about required agro technology for introduction of temperate fruit varieties such as Plum, Malta, Apple, Peach, and Walnut in the field despite favorable climate conditions	<input type="checkbox"/> Introduction of high value, temperate horticulture fruit types and grafts on private lands to develop orchard based income source with required techno managerial and input support <input type="checkbox"/> Improved market services for producers and buyers <input type="checkbox"/>
<input type="checkbox"/> <b>Enhanced degradation of existing natural resources</b> in the region thereby adding <b>hardship for hillwomen</b>	<input type="checkbox"/> Planned combination of climate smart and resource based development interventions to be able to enhance water, fodder, farm produce base in project villages

Main Problems identified	Suggested Technology Solutions
<input type="checkbox"/> <b>Growing scarcity of water</b> (surface and sub-surface) for drinking and irrigation purposes due to unseasonal, irregular, less consistent unpredictable rains in hills. Drying up of natural water sources, mainly springs	<input type="checkbox"/> Recharging of Natural Springs- through site specific mechanical and vegetative measures <input type="checkbox"/> Roof top rainwater harvesting <input type="checkbox"/> Innovative water use efficiency demonstrations <input type="checkbox"/> Ways for creating in situ natural water reserves in hills <input type="checkbox"/>
<input type="checkbox"/> <b>Growing scarcity of fodder</b> resources in hills to support livestock <input type="checkbox"/> Loss of habitats and increased neglect of common pastoral lands	<input type="checkbox"/> Fodder promotion on private and community lands through Vanpanchayats <input type="checkbox"/> Introducing ways and measures for perennial green fodder availability
<input type="checkbox"/> <b>Absence of optimum development of horticulture</b> e.g. cultivation of high value vegetables as a source of livelihood in spite of favorable conditions <input type="checkbox"/> <b>Sudden and extreme weather events posing threat to cultivation in open lands</b> <input type="checkbox"/> Limited options for crop and income diversification	<input type="checkbox"/> Promotion of horticulture under protected conditions (low cost bamboo based small poly houses). <input type="checkbox"/> Main crops to be promoted under the protective cultivation would be vegetables (e.g. Tomato, Capsicum, and Cucumber) <input type="checkbox"/> Piloting actions for organized production intensification, collection and marketing of farm produce by villagers
<input type="checkbox"/> <b>Low productivity of cattle and limited realization of livestock yield potential</b> <input type="checkbox"/> Absence of organized milk collection and marketing efforts	<input type="checkbox"/> Improved breeding services (using semen of suitable milk cattle breeds) at the door step of hill families and training and inputs for scientific and climate friendly livestock management <input type="checkbox"/> Piloting efforts for organized milk collection and marketing, linkage development with government promoted dairy. Anchal dairy has an operational base throughout most of the state

## Target groups

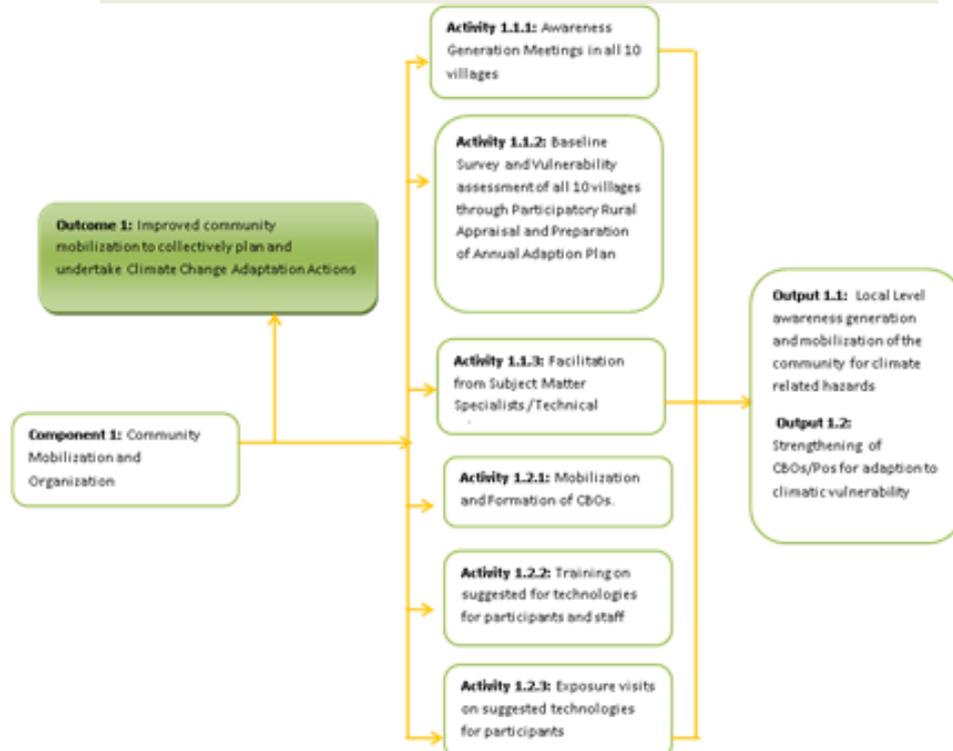


The effects of climate change are seen to be more severe on **women** Due to increased feminization of agriculture and also on poor marginalized groups including that of **small and marginal farmers, Landless and SC families** residing in the hill areas

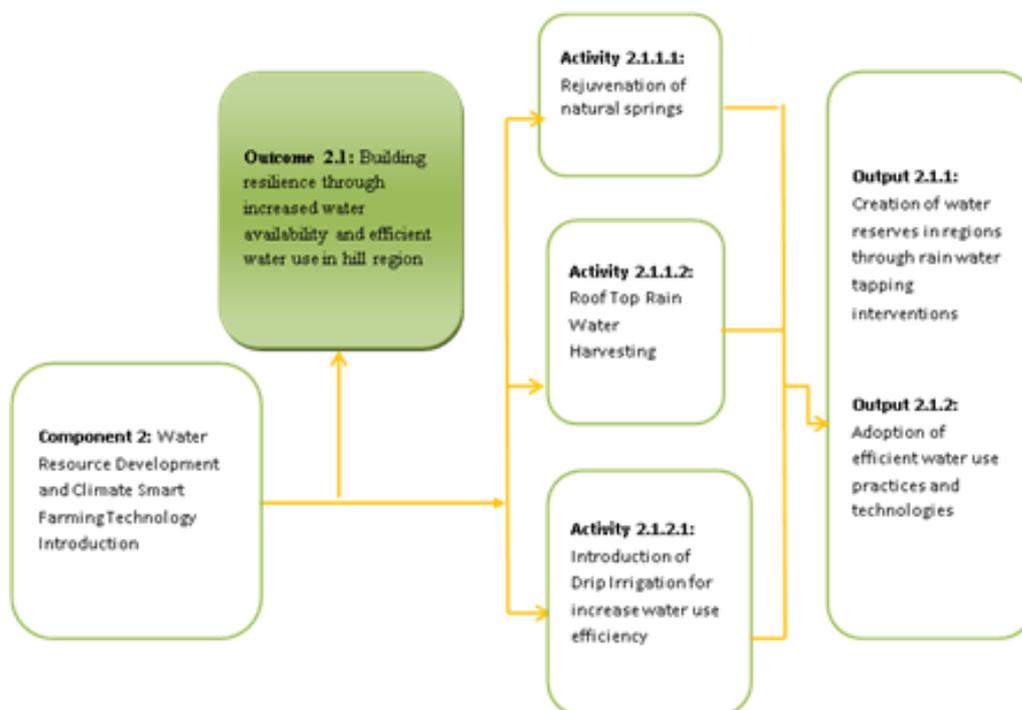
### **Project activities are planned at the level of 800 families which are to be selected using following criteria**

- Families with sole dependence on agriculture / primary sector which are climate sensitive as only source of income and livelihoods
- Families staying in remote hill areas ,where alternative livelihood options are limited
- Farmers with basic minimum resources to meet their livelihood requirements
- Women headed families where productive men have migrated to cities and thus females are taking care of farming and thus bear direct burden of degradation of natural resources due to falling effects of climate change /variability
- Poor households( Including Scheduled caste households ) to be jointly identified by villagers using participatory processes ( considering poverty and marginalization perspectives of the villagers

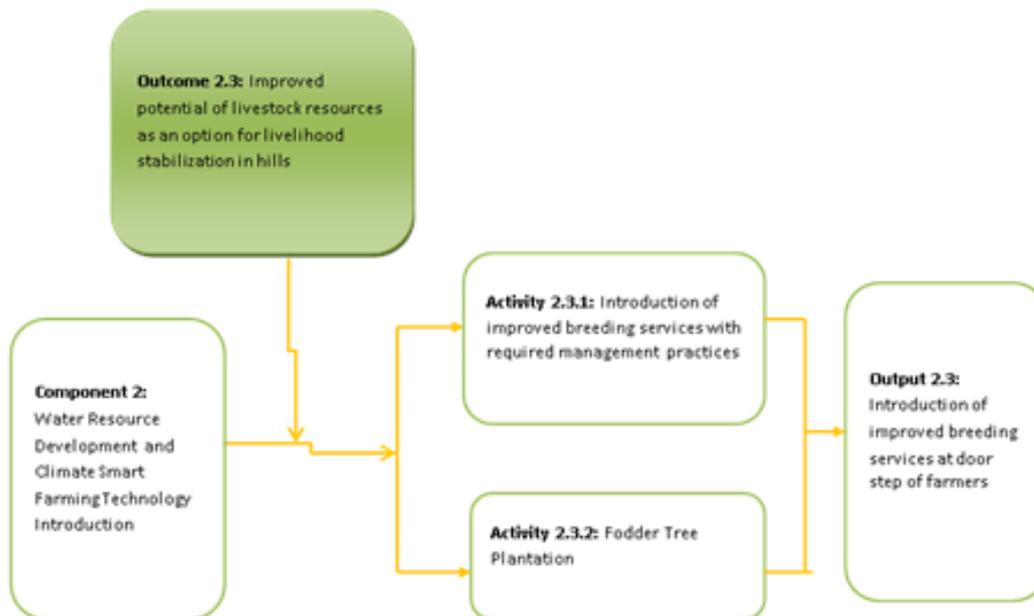
### Outcomes, outputs and activities under the project



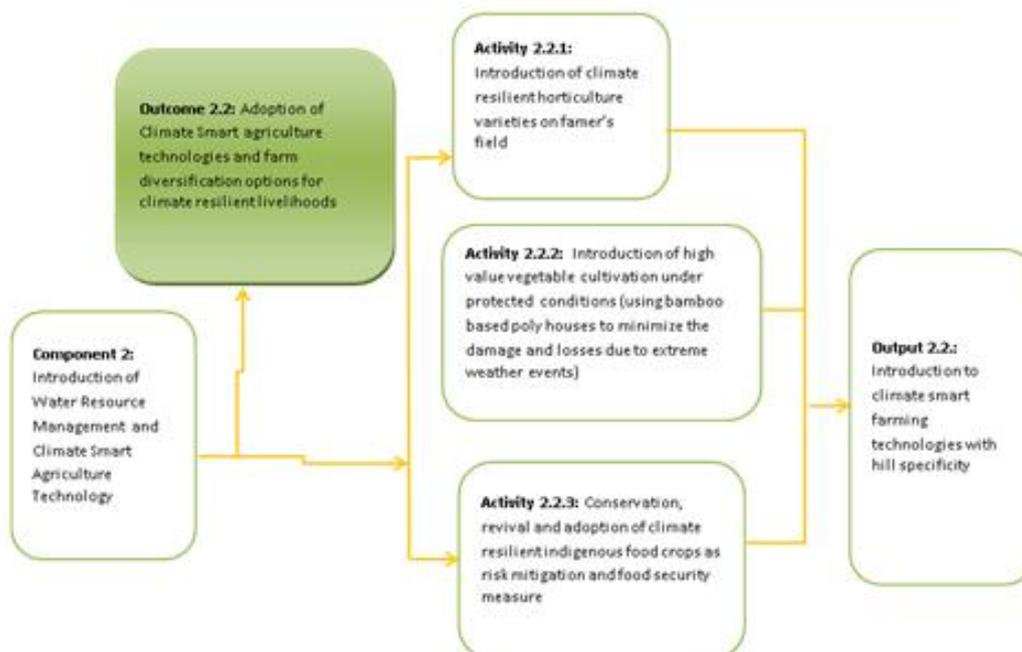
### Outcomes, outputs and activities under the project



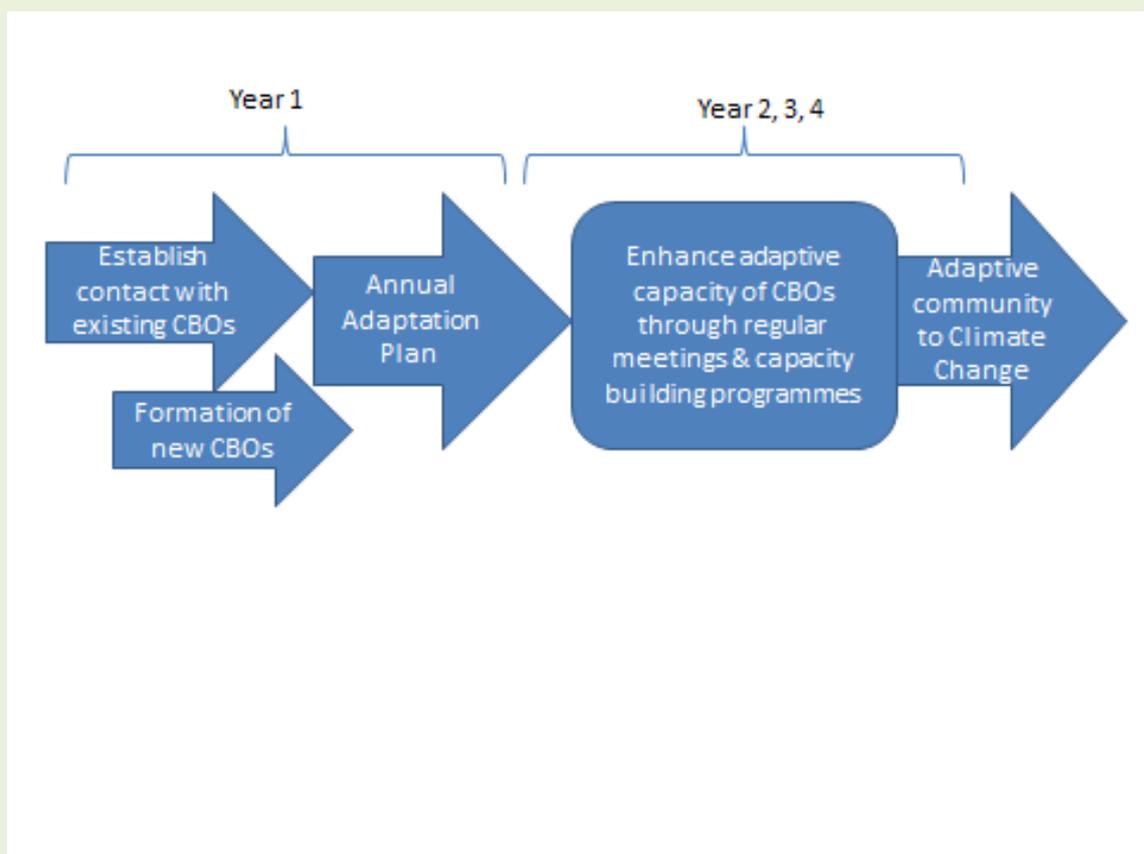
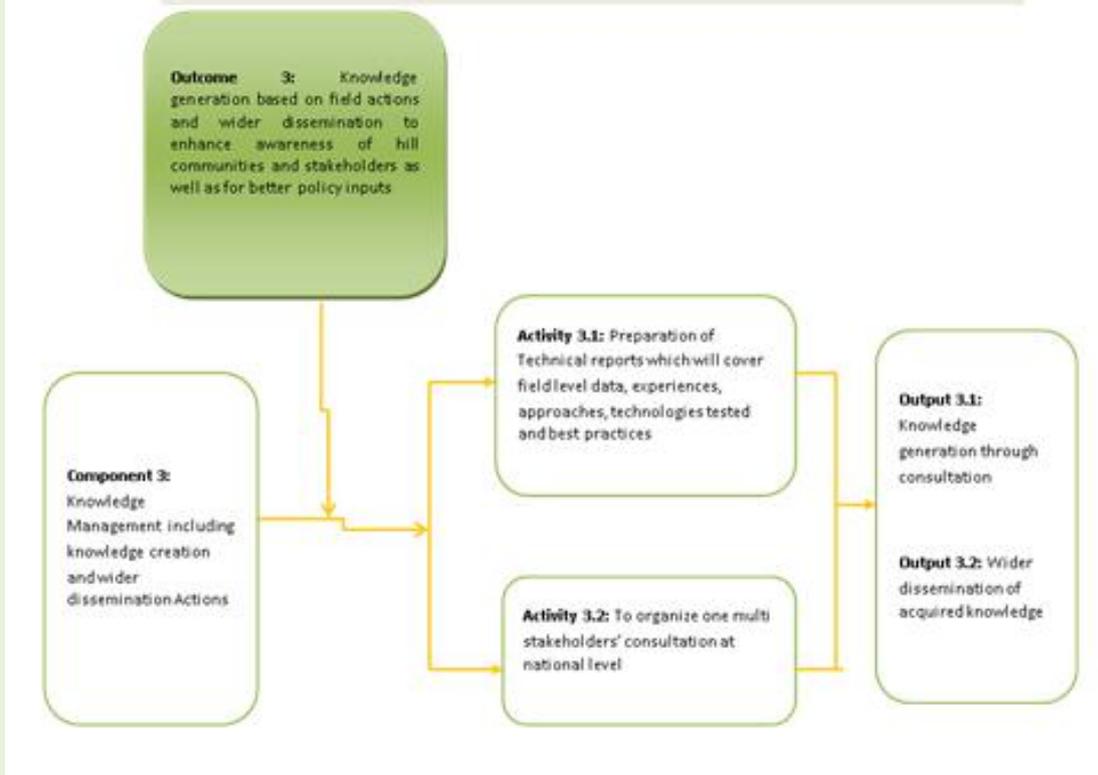
### Outcomes, outputs and activities under the project

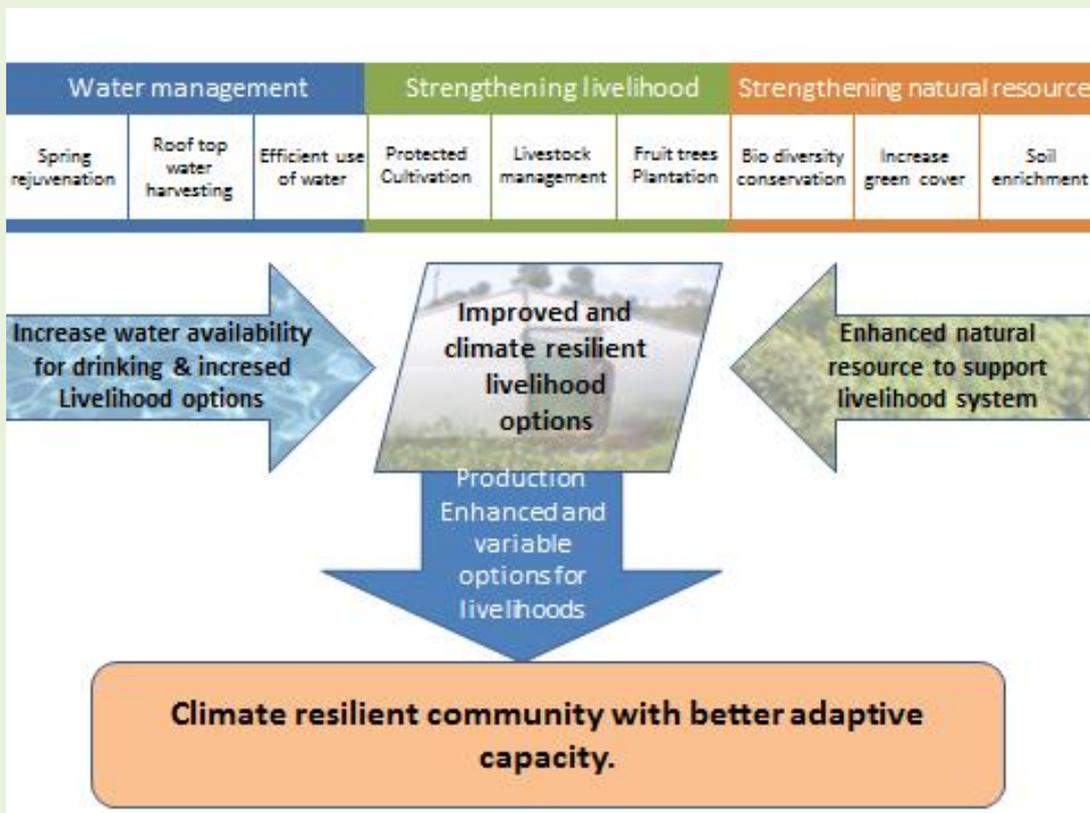


### Outcomes, outputs and activities under the project



### Outcomes, outputs and activities under the project





## Linkage development and partnerships

As a strategy it is proposed to develop linkages with relevant scientific and technical institutes involved in similar work like, Key ICAR (Indian Council for Agriculture Research) Institutes

- Vivekananda Parvatiya Krishi Anusandhan Sansthan (Almore),
- G.B.Pant University of Agriculture Technology (Pantnagar),
- GB Pant Institute Of Himalayan Environment and Development, (Kosi, Almore
- Central Institute of Tropical Horticulture, Mukteshwar
- Central Soil and Water Research Training Institute, Dehradun.
- local NGOs such as People Science Institute, Himalayan Action Research Centre (HARC), Himalayan Conservation Studies and Conservation Organization HESCO in Dehradun,
- Uttarakhand Dairy Cooperation Federation Etc.

- Key Govt. departments / Technical Institutes such as – animal husbandry/ agriculture/ Department of Science & Technology/ Rural development.
- Bilateral & multilateral funding agencies & program such as IHCAP/HICAP/ICIMOD
- Community based organization (CBOs)/ likeminded NGOs/Department Agencies/ Corporate homes etc.

### AREAS OF COOPERATION :

Strategic Research Technology Demonstrations And Transfer, Applied Field-based Research, Capacity Building and Outreach

## Role of NABARD as a NIE:

- NABARD would be involved in **periodic monitoring** (on-site and off-site). Periodicity and structure of monitoring is given below:
- On-site detailed monitoring would be done on a six monthly basis jointly by NABARD Regional Office (Dehradun, Uttarakhand) and Head Office, Mumbai. The frequency of monitoring would be increased if considered necessary
- Monitoring of Environmental and Social Risk parameters as identified under risk assessment and compliance with AF's E&S Policy.
- District Development Manager** i.e. NABARD officer stationed at the district, would be a part of the monitoring committee for implementation of the project at local level
- NABARD would be **part of steering committee which would meet every six months**. The committee would deliberate and review the progress of implementation
- Quarterly report submission formats would be designed for submission by the executing entity for **desk appraisal of progress**. This will be structured as a part of the off-site monitoring
- Surveillance system and would be designed to generate warning signals, if any
- Progress reporting would be done to AFB on periodic basis (half yearly or more frequently as per requirement of AFB)
- NABARD would create a platform for sharing and dissemination of knowledge at the regional and national level.

## Roles and responsibilities of BAIF:

- ❑ Project executing entity directly responsible for smooth and effective execution of proposed project activities in North Western Himalayas
- ❑ Setting up project management systems along with BIRD-UP and Team at Uttarakhand including appointment of staff, finance, HR, M&E, Project implementation, defining strategies for defined project components
- ❑ Facilitating involvement of stakeholders, building working relationships and partnerships with likeminded institutes and development actors
- ❑ Knowledge management and data generation (planning strategies and suitable activities and events)
- ❑ Facilitating convergence and co-financing to enhance the impact
- ❑ Capacity building of project staff and other stakeholders for effective project execution
- ❑ Progress Reporting to NABARD – physical, financial and impact parameters ( Six monthly )

## Project Steering and M&E

Institutional Arrangement	Composition/Membership	Roles and Responsibility
State Steering Committee	<p>This will be comprised of</p> <ul style="list-style-type: none"> <li>❑ Project Director of BAIF and Project co-ordinator from BIRD-UP</li> <li>❑ Members from NABARD RO and HO</li> <li>❑ Representative of nodal department in the State dealing with climate change and Station Action Plan for Climate Change (SAPOC)</li> <li>❑ Representatives from Technical Advisory Group</li> </ul> <p>BAIF Project Director is Convener of the State Steering Committee, which will be called on half-yearly basis.</p>	<ul style="list-style-type: none"> <li>▪ Oversight of the project-financial and technical implementation</li> <li>▪ Ensuring full implementation of project actions and speedy progress</li> <li>▪ Monitor the progress of the project against the agreed time lines</li> <li>▪ Facilitating linkages and partnerships with resource agencies, government and other development agencies having similar mandate</li> </ul>
Technical Advisory Group	<p>Experts with qualification and Experience in:</p> <ul style="list-style-type: none"> <li>❑ Climate Change and development of Adaptation Strategies in Himalayan Region</li> <li>❑ Agriculture Experts</li> <li>❑ Geo Hydrology</li> <li>❑ Rural Marketing</li> </ul> <p>These experts will be drawn from Govt. Departments, Universities, and Technical Institutions.</p>	<ul style="list-style-type: none"> <li>▪ Make recommendation to the Project Team on technical matters to incorporate the same in the implementation plan</li> <li>▪ Provide science and technology inputs to main program components.</li> <li>▪ Ensuring technical standards and quality of inputs</li> <li>▪ Assess relevance and impact of the climate adaptation strategies</li> </ul>

Project Components	Expected Concrete Outputs	Expected Outcomes	Amount (US\$)
Component 1: Community Mobilization and Organization	Output 1.1: Local level awareness generation and mobilization of the community for climate related hazards. Output 1.2: Strengthening of CBOs/POs for adaptation to climatic vulnerability	Outcome 1: Improved community mobilization to collectively plan and undertake climate change adaptation	68,133
Component 2: Introduction of Water Resource Development and Climate Smart Farming Technology	Output 2.1.1 Creation of water reserves in regions through rain water tapping interventions Output 2.1.2 Adoption of efficient water use practices and technologies Output 2.2 Introduction to climate smart farming technologies with hill specificity Output 2.3 Introduction of improved breeding service at door step of farmers with required management practices including fodder and feed management	Outcome 2.1: Building resilience through increased water availability and efficient water use in hill region Outcome 2.2: Adoption of climate smart agriculture technologies and farm diversification options for climate resilient livelihoods Outcome 2.3: Improved potential of livestock resources as an option for livelihood stabilization in hills	731,575
Component 3: Knowledge Management including knowledge creation and wider dissemination actions	Output 3.1: Knowledge generation through field action component Output 3.2: Wider dissemination of acquired knowledge	Outcome 3: Knowledge generation based on field actions and wider dissemination to enhance awareness of hill communities and stakeholders as well as for better policy inputs	16,667
Project/Programme Execution cost			76,595
Total Project/Programme Cost			893,970
Project/Programme Cycle Management Fee charged by the Implementing Entity			75,600
Amount of Financing Requested			969,570

## Project implementation

Project Team	BAIF, Pune: Comprising of Project Director and other technical team	<input type="checkbox"/> Responsible for overseeing execution of project activities <input type="checkbox"/> Fund administration of the project <input type="checkbox"/> Procurement of goods and services <input type="checkbox"/> Monitoring and Evaluation inputs <input type="checkbox"/> Communication with NABARD <input type="checkbox"/> Knowledge Management <input type="checkbox"/> Coordination with Government Departments for ensuring convergence
	Project Team comprising of Project Coordinator, Field Coordinator, and Field Team Members	<input type="checkbox"/> Adherence to various project management systems and standards as per the AF requirements <input type="checkbox"/> Preparation of work plans and execution. <input type="checkbox"/> Progress Reporting to NABARD through Project Director – Physical, Financial and impact parameters <input type="checkbox"/> Rapport with project stakeholders, Government Agencies, at project level.

## Status of Operationalization of the Grievance Mechanism for the project

The project implementation system is in place. Within that a cluster office has been set up at Lohaghat, which is located near project villages. The project villages are in the range of 10 – 30 km from this cluster level office. The office has 4 team members as indicated below

Program Coordinator( 1)	Mr Dinesh Rathuri
Field Coordinator ( 2 )	Mr Pushkar Bisht , Mr Dhumaka
Field Team Member (1)	Mr Bhim Singh
BAIF 's Cattle Development Center In charge	2 Center in charge in project villages itself

At the level of State Office, Dehradun. Mr D.K. Tiwari, Deputy Chief Program Coordinator is overseeing the work ongoing in the project cluster. He will also be monitoring the progress on systems being set up for addressable of Grievances and type of Grievances in the field.

All these team members have currently built good rapport with the villagers from 10 project villages. They are directly accessible to any villagers to explain / clarify / share any sort of information as required by villagers.

As a part of project inception phase, initial meetings are being organized regularly in villages. During these interactions the information is shared in front of villagers in local language .The type of information shared includes , background of project, scope, type of interventions, key activities, type of vulnerability wise solutions , about the type of vulnerable groups to be focused , participant selection criteria's etc. This helps building transparent system of project implementation and laying foundation for participatory project implementation.

The village wise baseline study and vulnerability assessment exercise would be conducted in a participatory manner. Most of the village specific issues would be discussed there along with possible solutions. The interventions are thus planned in presence of community. Thus a care has been taken to see that there is no environmental or social harms caused by project to which villagers would object.

The team of BAIF cluster office ensures an accessible, transparent, fair and effective process for receiving and addressing their complaints about the project.

Internally EE (BAIF) has discussed the need to set up additional systems for addressing of grievances. The methodology note is being prepared to set up such system at various levels (Village, cluster and state office level) so that any person aggrieved by any aspect of the Project can lodge an oral or written grievance to local authorities who are involved in project implementation.

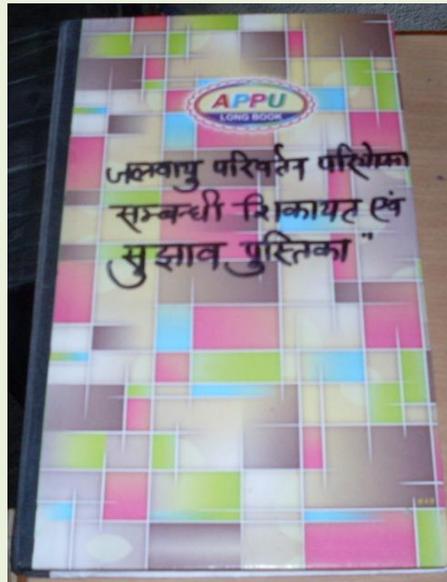
During the project inception phase, it has been discussed to set up a Grievance Committee at the field location. Currently more clarity about the scope of work through this committee is being finalized along with probable list of members. First Meeting of the committee is planned to be organized in March 2017.

BAIF will keep a record of all complaints referred to the grievance committee, including a description of issues raised. Complaints regarding environmental and social issues of the project will be then filed at the Office of the Executing Entity with a copy to NIE in writing. A system of monitoring the action taken and disposal of such complaints shall be put in place. ( **By March 2017** )

**Following actions are also proposed additionally while operationalizing the Grievance Redressal Mechanism :**

1. Name, designation and number of the concerned official of BAIF to whom the project activity related grievances can be addressed will be displayed in the project area
2. All the project villages will have display board stating the name of the project and names of NIE and Executing Agency. The names of contact persons and their mobile numbers will also be displayed on these boards
3. The village committee and gram panchayat which finalizes the interventions will pro-actively disclose the grievance mechanism that exists in the project. To maintain consistency across villages a pamphlet related to the project comprising of the grievance mechanism will be printed and distributed in the village committee meeting. A copy of the pamphlet will be kept in the office of the Gram Panchayat so that it can be accessed during the course of project implementation
4. All grievances received either orally or in written form will be recorded in the Complaint Register maintained in the cluster office. Each such complaint will be identified by a complaint number and will be followed up and the resolution of the grievance will also be recorded. A consolidated statement of complaints received and resolved will be reported in the State Steering Committee
5. Information related to grievance mechanism will be provided in the language that is easily understood by the members of the village community.

Photo glimpses of arrangements made for of grievances redressal:





## “ Climate smart actions and strategies in North Western Himalayan region for sustainable livelihoods of agriculture-dependent hill communities”

A project by BAIF - AFB- NABARD in the state of Uttarakhand

### CONTEXT

The Indian Himalayan Region (IHR), spreads to 5.3 lakh km<sup>2</sup> and comprises of 16% geographical area of India, represent one of the most fragile and vulnerable ecosystems and largely undeveloped region. The Central and Western Himalayan regions consist of fragile areas of Jammu and Kashmir, Himachal Pradesh and Parts of Uttarakhand and have its unique set of agro ecological features and socio economic conditions. The mountain regions are characterized by positive attributes like diversity, human adaptation, niche advantages and largely nature based farming, whereas constraints include marginality, inaccessibility and fragility. Communities here try to create livelihood opportunities in difficult terrain with dwindling resource base. In general Economic security is major concern for mountain people.

Climatic variations are more pronounced in the Himalayan region. Recent decades have seen the newly emerging threat of climate change. Rising maximum temperatures, reduced number of rainy days and greater frequency of drought incidence and growing episodes of extreme climate events are some of the noticeable Changes. These changes are jeopardizing the earlier development efforts and are also posing the newer challenges for the basic livelihoods security for the agriculture dependent hill communities. There is thus a need to explore solutions beyond the limitations of physical, financial, technological context. There is also a need to build capacity of small and marginal farming communities and of the food systems to adapt to climate change

### ABOUT THE PROJECT



Climate smart actions and strategies in north western Himalayan region for sustainable livelihoods of agriculture-dependent hill communities is the strategic approach proposed by BAIF, under which efforts would be made to introduce set of activities which are expected to improve /sustain the livelihoods of vulnerable hill communities and show ways of diversification of income while also initiating the process of natural resource management in the Himalayan region. Together these are expected to result in to building resilience of farming communities

### ABOUT ADAPTATION FUND BOARD

**Adaptation Fund under United Nations Framework Convention on Climate Change (UNFCCC)** was launched in 2007 to finance concrete projects and programmes that help vulnerable communities in developing countries that are Parties to the Kyoto Protocol to adapt to climate change. The Adaptation Fund headquartered in Washington, USA is supervised and managed by the Adaptation Fund Board (AFB). Ministry of Environment, Forest & Climate Change, Govt. of India is National Designated Authority (NDA) for Adaptation Fund and proposals are submitted with endorsement of NDA. NABARD has been accredited as National Implementing Entity (NIE) for Adaptation Fund in July 2012 and is only NIE for India

#### **PROJECT GOAL:**

To improve the adaptive capacity of rural small and marginal farmers including hill women in North Western Himalayan region to respond to climate change . This is to be achieved by introducing a combination of Climate Smart Farming Technologies along with required social engineering and capacity building processes. The project also envisages creating field-based evidence of climate resilient strategies and approaches in mountain ecosystems

#### **PROJECT APPROACH**

The project to focus on diversification of production systems and improving the institutional capacities to adopt climate smart technologies and practices in Hill context. As a strategy, linkages and partnerships will be developed with relevant technical and scientific institutes in the region for required technology back stopping. Partnerships would be forged with institutes of repute such as, Vivekananda Parvatiya Krishi Anusandhan Sansthan (Almora), G.B.Pant University of Agriculture Technology (Pantnagar), GB Pant Institute Of Himalayan Environment and Development, (Kosi, Almora), etc. It has close linkages with the Central Institute of Tropical Horticulture, Mukteshwar and Central, Soil and Water Research Training Institute, Dehradun. The working relationships have also been developed with local NGOs such as People Science Institute, Himalayan Action Research Centre (HARC), Himalayan Conservation Studies and Conservation Organization HESCO in Dehradun, Uttarakhand Dairy Cooperation Federation Etc. The collaborative areas will include strategic research, technology demonstrations and transfer, applied field-based research, capacity building and improved outreach. The Project will also strive to complement on-going government programs and thereby try and achieve an objective of convergence for effective adaptation

#### **PROPOSED PARTNERSHIP:**

- Key ICAR (Indian Council for Agriculture Research) Institutes working on hill/Himalayan issues
- Key Govt. departments / Technical Institutes such as - animal husbandry/ agriculture/ Department of Science & Technology/ Rural development.
- Bilateral & multilateral funding agencies & program such as IHCAP/HICAP/ICIMOD
- Community based organization (CBOs)/ likeminded NGOs/Department Agencies/ Corporate homes etc.

## KEY ACTORS:

- AFB- NABARD - MOEF (Government of India)
- BAIF Development Research Foundation
- Community Based Organizations and people's collectives
- Local Communities from the project villages



## PROPOSED STRATEGY:

1. Participatory field assessment / planning in a cluster & empowerment of local institutes.
2. Introduction of suitable technologies at household & landscape level in Hills
3. Capacity enhancement of communities/ CBOs & Community Resource Persons
4. Facilitated knowledge / exchange events involving multiple stake holders
5. Partnership

## PROJECT COMPONENTS:

1. **Community Mobilization and Organization:** The project will focus on building cohesive groups of villagers to respond positively to climate change .Efforts would be made to mobilize affected communities by way of awareness generation on climate related hazards and by undertaking series of capacity building events for adaptation

2. **Planning and for improved adoption of climate smart technologies.** It is proposed to focus on strengthening of CBOs/POs for improved adaptation to climatic vulnerability.
3. **Introduction of water resource development actions** such as rejuvenation of natural springs, roof top rainwater harvesting, water use efficiency, water management etc.
4. **Climate smart farming technologies** and farm diversification options for climate resilient livelihoods. Here the main purpose is to diversify livelihood and production systems by integrating various subsystems e.g. vegetable crops, fruit tree, indigenous crops, livestock, etc. Considering that hill conditions and diversity of bio-geographic zones and altitudinal variations provide favorable conditions for growth of many horticulture crops including temperate and sub-tropical fruits, under the project, thrust would be laid on introduction of hill specific horticulture varieties on farmer's field and on introduction of high value vegetable crops under protected conditions (using bamboo based poly house and innovative agro techniques). Project will also try to form farmer producer organizations and link these producers to market.

**Conservation, revival and adoption of climate resilient indigenous food crops** are also identified as important component. There are a number of native crops which can tolerate stress and have adapted well to unique climatic conditions in fragile hill areas. The focus under the project would be on conservation of crop diversity and knowledge associated with it focusing food security, risk mitigation and livelihood development, characterization and evaluation of crop landraces and trials for productivity enhancement of worthy landraces. Establishment of community managed seed banks and promoting village level seed production.

5. Improving the potential of livestock resource in hills as a strategy for risk and income diversification. The focus under this component would be on disseminating technical know-how of different technologies such as improved breeding service with required management practices in livestock resources, nutritious fodder promotion
6. Knowledge Management including knowledge creation and wider dissemination actions

## **PLANNED OUTPUTS**

- Improved community mobilization to collectively plan and undertake climate change adaptation
- Building resilience through increased water availability and efficient water use in hill region
- Adoption of climate smart agriculture technologies and farm diversification options for climate resilient livelihoods
- Improved potential of livestock resources as an option for livelihood stabilization in hills

- Knowledge generation based on field actions and wider dissemination to enhance awareness of hill communities and stakeholders as well as for better policy inputs  
The project is expected to ensure sustained income for hill farmers in their own settings under changing climate change context while also focusing on the regenerative capacities of natural resources

## EXPECTED IMPACT

- Direct impacts accruing at family level in the pilot areas. (Better income and more productive assets, better management systems etc.).
- Direct impacts accruing at the area level in the pilot areas (e.g. productive and better managed natural resources in the areas through silvipasture).
  - A streamlined intervention package on climate change adaptation programs in fragile hill areas for further up scaling and replication.



## GEOGRAPHIC FOCUS:

The project activities are planned to be implemented in a cluster of 10 villages in Pati and Lohaghat blocks of district Champawat in the state of Uttarakhand

## TARGET GROUP :

The project interventions are proposed directly at the level of near about 800 families including hill women, small and marginal farmers and other such vulnerable groups whose livelihoods are solely dependent on primary sectors such as agriculture and livestock, forest produce etc. Many activities are proposed to be planned considering the issue of growing hardship on hill women who are engaged in farming operations. The indirect beneficiaries would be all the villagers from the project villages

## IMPLEMENTING AGENCY:BAIF DEVELOPMENT RESEARCH FOUNDATION

BAIF Development Research Foundation, is a development organization, established in 1967, is involved in implementation of pioneering development programs in different parts of the country. BAIF is involved in identifying and introducing suitable development interventions and implementing multidisciplinary programs with an

objective to bring about livelihood development, sustainable natural resource management and quality of life for rural poor and deprived tribal communities. This has benefited more than 5 million families spread over 80,000 villages in 16 States of India.

BAIF has developed some unique models of livestock development (consisting of home delivered A.I. services through cryogenic cold chain) a comprehensive watershed plus approach (combining NRM and livelihoods), and the holistic Wadi program with a tree based farming system approach as a model of holistic tribal development.

Realizing a need to set up a Thematic Center to develop appropriate program approaches / packages for niche areas of India, such as North Western Himalayan Regions, BAIF has set up **Center for Development in Fragile Hill Areas**. The center is head quartered in Dehradun and operates in different regions of Uttarakhand.

**NABARD AS NATIONAL IMPLEMENTING ENTITY (NIE):** India has shown its commitment to help address the global climate challenge and Government of India accorded top priority for addressing climate change related concerns. Funding is vital in developing countries to design and implement adaptation and mitigation projects. NABARD has taken various initiatives to be able to address the challenges posed by Climate Change particularly in the areas of agriculture and rural livelihood sectors. NABARD aims to channelize national, international and private finances for adaptation and mitigation activities in India. As a NIE, NABARD bear full responsibility for the overall management of the projects financed by the Adaptation Fund and has all financial, monitoring, and reporting responsibilities.

**Contact for details:**

**BAIF -PUNE, Head Office, Dr. Manibhai Desai  
Nagar, Warje, Pune, 411058, Maharashtra**

**020-25231661, Email: [baif@baif.org.in](mailto:baif@baif.org.in)**

**BAIF Uttarakhand Office Contact: ,BAIF  
Institute for sustainable livelihoods and  
development, ( BISLD-Uttarakhand) ,Nathanpur  
Ring Road ,Mossuri bypass ( Jogiwala) , Post  
office Nehrugram, 248005,Phone: 07897993041**

**Email: [baifuttarakhand@gmail.com](mailto:baifuttarakhand@gmail.com)**

- [NABARD Regional office, Dehradun,  
Uttarakhand](#)

