EU Technical Assistance Complementary Support Project (EU-TACS) - Bhutan

Final Report :

Core Competency Training on an Evidence-Based Statistics for Economic Development (CCT-1)

Service Contract N° ACA/2019/404-700

Mission Report by:

Indian Institute of Forest Management Bhopal
Nehru Nagar
Bhopal, India

March 2020

Version 0 20-03-20

International Cooperation and Development

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Acknowledgements

At the outset, we would like to thank, EU-Bhutan Technical Assistance Complementary Support Project (EU-TACS), funded by the European Commission, and DAI Brussel for selecting Indian Institute of Forest Management Bhopal, to conduct the 10 days training for senior officers of Royal Government of Bhutan. We would like to extend our sincere gratitude to Mr P. Gustavo, Mr D. Karpo and Mr Fillipo Marcillini for all advisory support and follow-ups throughout the training period and later on also.

We would like to thanks Dr Pankaj Srivastava, Director IIFM and Dr C S Rathore, Dean IIFM for all the support and guidance related to this training programme. We would like to thank the Department of Forest and Agriculture of Bhutan Government for nominating 15 senior key officials to visit IIFM and participate in the said training. We would like to thank all the participants for creating an active learning environment for 10 days at IIFM and making it participatory training with a win-win situation for both the trainer and trainee.

We would like to thanks all internal subject experts and administrative units of IIFM to support the smooth conduction of this training programme. We would like to thank the villagers of Ucher village near Sanchi for allowing us to visit their village and give time to discuss with Bhutan training officials. Finally, thanks to all the stakeholders, experts, governmental counterparts and MOEFCC New Delhi for their vital contribution to the training programme

Table of Contents

List of abbreviations/acronyms **4**

Executive Summary **5**

1 Introduction **7**

2 Methodology **9**

2.1 Learning objectives and 3-step teaching methodology 9

3 Delivery of the training **9**

4 Detail report of day wise training **10**

4.1 Day 1 Understanding the Context and Expectations 10

4.2 Day 2: Research Design for Policy Framing and Evaluation 10

4.3 Day 3: Evidence Collection Process for Policy Evaluation 11

4.4 Day 4 and 5: Data Analytics 11

4.5 Day 6 Field visit (Socioeconomic Data Collection) 12

4.6 Day 7 and 8 Marketing scope in agribusiness and Agribusiness value chain analysis 13

4.7 Day 9 and 10 Project planning and Project monitoring and evaluation 14

5 REFERENCE AND MATERIAL USED FOR TRAINING **15**

6 AnnexES **19**

6.1 Annex 1: The list of Bhutanese officials for Evidence-based Statistics for Economic Development Training, IIFM, Bhopal, India (06 to 15 January 2020) 19

6.2 Annex 2: Programme schedule Evidence-Based Statistics for Economic Development Jan 6-15, 2020 at IIFM Bhopal 19

LIST OF TABLES

Table 1: Day wise schedule for Core Competency Training on Evidence-Based Statistics for Economic Development..... 9

Table 2: Feedback summary.....16

Table 3: Feedback details.....17

LIST OF ABBREVIATIONS/ACRONYMS

AWCB	Agriculture Waster, Co-product and by-product
AMUL	Anand Milk Union Limited
BRAC	Bangladesh Rural Advancement Committee
CPM,	Critical Path Method
DAI	Development Alternative Incorporated
DFID	Department for International Development
EU	European Union
EU-TACS	EU Technical Assistance Complementary Support Project
FYP	Five Year Plan
HBR	Harvard Business Review
IAS	Indian Administrative Service
IFAD	International Fund for Agricultural Development
IIFM	Indian Institute of Forest Management
LFA	Logical Frame Analysis
MUDRA	Micro Units Development and Refinance Agency Bank
MSP	Minimum Support Price
PERT	Program Evaluation Review Technique
PRA	Participatory Rural Appraisal
PTM	Participatory Training Method
Retd	Retired
RNR	Renewable Natural Resources
WBS	Work Breakdown Structure

EXECUTIVE SUMMARY

The capacity building training of Royal Bhutan government officers titled "Core Competency Training Course on Evidence-Based Statistics for Economic Development" sponsored by EU Technical Assistance Complementary Support Project (EU-TACS) – Bhutan, was organised from 06-15 January 2020 at the Indian Institute of Forest Management, Bhopal. Total 16 officers (one was representative of DAI Brussel) attended the training. These officers from the Ministry of Agriculture and Forests represented the Departments of planning, forest, agriculture, livestock and marketing and were involved in the economic development in Bhutan in its 12th FYP.

The task given to IIFM was to achieve the following goals through this training course:

- After the training course, the participants will be in a better position to understand and interpret evidence-based statistical reports and their findings;
- After the training course, the participants will be able to design and conduct socio-economic research and studies in the RNR sector in a better way;
- After the training course, the participants will be able to develop Agro-enterprise strategies and Agri-business proposals linking to the sector's 12th FYP (related to the RNR sector) and submit them to the Ministry for further interventions.

Based on above goal IIFM designed the training course with a focus on teaching cases, class exercises, group work, field visits, group presentations, deliberations and discussions. The ten-day training comprised of four daily sessions each of 90 minutes. As the methodology of training was adult learning and case-based the duration of 90 minutes was important for participants to first get an immersion into the topic followed by learning through group work, presentations, discussion and debate.

The ten days training was distributed into different modules: Day 1 was for knowing the participants their training need, their expectations, Bhutan context of development and understanding of agribusiness and challenges in Bhutan. Day 2: was assigned for learning statistical topics like research design and policy framing covering topics such as research design, formulating research questions, developing a research plan and understanding the use of evidence-based statistics.

Day 3: was for research design for policy evaluation. On this day the learning objective covered were sampling techniques, sampling plan, sample size, preparing sampling strategy, scoring and preparing an evaluation plan. Day 4 and 5 were allocated to Data analytics and the learning topics were generating descriptive and visualization from data, and formulation of evidence-based policy, inferential statistics, and forecasting. The qualitative tools like participatory data collection were discussed and plan for field visit was discussed.

Day 6 was used for visiting the Ucher village in Raisen district of Madhya Pradesh state and the officers participated in collecting qualitative and quantitative data on poverty pathways tool, DFID sustainable livelihood framework and BRAC graduation tool of development planning. The participants formed three sub-groups and interacted with the villagers and collected socio-economic data, carried out data analysis and report preparation as well. Later on a visit to a world heritage site, Sanchi Stupa was organized for the participants.

Day 7& 8 was scheduled for Marketing scope in agribusiness and value chain analysis. The topics covered were: Identification of potential agro-business ideas based on resources, agro-commodity based, facilitation based, market potential, technical and financial feasibility, identifying internal and external risk, exploring mitigation strategies to avoid or reduce risk, developing marketing strategy and learning, place and sale, value addition, value chain for local, regional, national and international markets.

Day 9&10 were devoted to Project Management – planning and monitoring and evaluation. In these two days learning outcome was planning using a logical framework approach, policy formulation, monitoring tool and preparing a work plan using open source project management software. It was followed by project management components supported by two studies, one on stream revival in Sikkim Himalaya and other on climate change and climate-smart village. The feedback was taken both objectively and shared perception of the participants and it was found to be very effective.

1 INTRODUCTION

The capacity building training of Royal Bhutan government officers titled "Core Competency Training Course on Evidence-Based Statistics for Economic Development" sponsored by EU Technical Assistance Complementary Support Project (EU-TACS) – Bhutan, was organised from 6-15 January 2020 at the Indian Institute of Forest Management, Bhopal. Total 16 officers (one was representative of DAI Brussel) attended the training. These officers represented the department of planning, forest, agriculture, livestock and marketing and were the focal point in the process of development implementation taking place in Bhutan in its 12th FYP.

European Union and DAI assigned the following objective for this training course – "Enhance the policymaking, planning, monitoring and evaluation and information (statistics) management capacities of the RNR officials representing Royal Government of Bhutan".

The task given to IIFM was that through this training course the following goal needs to be achieved:

- After the training course, the participants will be in a better position to understand and interpret evidence-based statistical reports and their findings;
- After the training course the participants will be better able to design and conduct socio-economic research and studies in the RNR sector;
- After the training course, the participants will be able to develop Agro-enterprise strategies and Agri-business proposals linking to the sector's 12th FYP (related to the RNR sector) and submit them to the Ministry for further interventions.

Based the above-mentioned learning outcomes the Ministry of Agriculture and Forests, Government of Bhutan nominated 16 officials, from the MOAF from various technical departments, who are responsible for providing policy and planning services to the overall MOAF and its various technical departments and agencies to attend this training.

The expectation from the officers was that after the training course they:

1. Should be better equipped to coordinate the implementation of the 12th FYP by providing necessary policy advice to the decision-makers;
2. Should provide economic position papers on the pre- and post- 12th FYP situations for key target Agro-enterprise and Agri-business sub-sectors based on evidence-based statistics and research studies for target subsectors within the 12th FYP (using departmental or agency 12th FYP documentation and new research initiated by themselves) within three months of completing the training course;
3. Should develop an appropriate Agro-enterprise strategy for one target commodity (with high investment potential) already envisaged in the 12th FYP within four months of the training course completion. To be carried out by the participant as lead writer, through joint efforts with concerned department or agency staff;
4. Should provide an Agri-business development plan for a component of a target subsector within six months of completing the training course for submission for investment funding under the 12th FYP.
5. They will be working as lead writer, through joint efforts with concerned department or agency staff (the plan will include mitigation measures put into place to address any assumptions and risks).

The scope of work within the context of the EU-TACS project was as follows:

- *Evidence-based statistics* are used for policy and agribusiness development. This is done through various methods such as using existing statistics (e.g. sample surveys, census data, administrative by-product data), carrying out market research studies, carrying out value chain studies for commodities with investment potential, carrying out gross margin analysis for individual commodities or groups of commodities, using auditing and financial analysis to assess viability of businesses.
- *Agro-enterprises* are defined through assessing inputs, production, processing, transport, and marketing for individual commodities in the agriculture, livestock and forestry sectors. These are often well defined in value chain case studies carried out on a local, regional or national basis.
- *Agri-business models* are the different management systems by which Agro-enterprises are turned into sustainable economic businesses. The models will vary based on local country contexts. In the case of Bhutan, the following agri-business models are currently used private sector, public-private partnerships, state-owned enterprises, cooperatives, and contract farming with farmer groups et al. Agri-businesses may be commodity-focused following the whole value chain or they may relate to individual inputs supplies and services to farming or agri-businesses e.g. agrichemicals, breeding, crop production, distribution, farm machinery, processing, and seed supply, as well as marketing and retail sales.

Based on the above guidelines, IIFM designed and delivered the ten days of training using the following pedagogy and methodology.

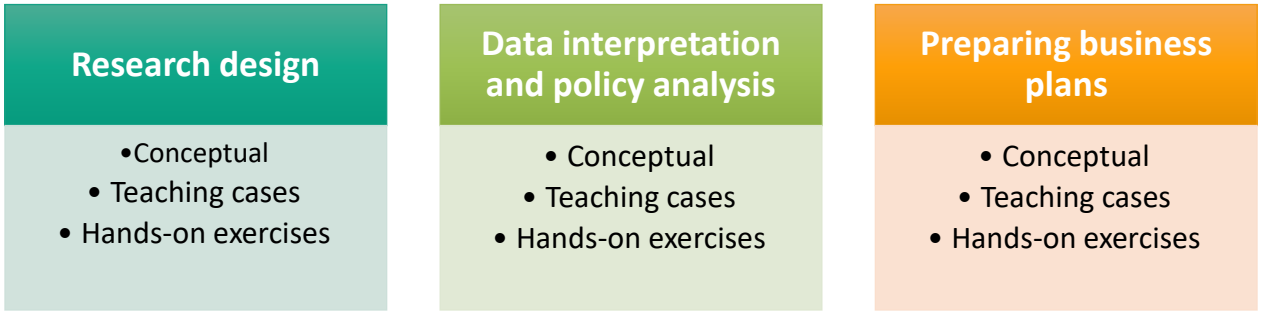
The methodology and time table based on the above parameters are given below.

2 METHODOLOGY

The training programme was designed to make it especially relevant to policymakers responsible for uplifting the economic status of Bhutan. As desired the training had three outcomes related to research design, data interpretation and policy analysis and preparing business plans. Each of these outcomes was taught in three steps. Firstly, the concepts, principles and frameworks were elaborated. This was followed by teaching cases to understand the application of these principles in a real-life scenario and finally, hands-on exercises were carried out followed by group exercise and presentations. This three-step approach helped in embedding the learning concepts and their application in the design, execution and monitoring of research studies; evidence-based policymaking and developing agri-project proposals and strategies for socio-economic development with special reference to natural resources.

The training followed Participatory Teaching Methodology (PTM) designed for adult learning, using teaching cases with more interactive learning and sharing. Each session was of 90 minutes' duration because PTM (case discussion, case analysis, data analysis exercise and role-play) needs time for the participants to get accustomed to the case and tools. A one-day field visit was organized for socio-economic qualitative research experience in a nearby village to develop qualitative and quantitative data collection skills.

2.1 Learning objectives and 3-step teaching methodology



3 DELIVERY OF THE TRAINING

Based on the above objectives and learning outcome provided by EU TACS the detailed day-wise programme schedule was prepared and shared (7.2Annex 2). The same programme schedule was implemented in the 10 days training organised by IIFM from 6-15 Jan 2020 at Bhopal.

The details are given in Table 1:

Table 1: Day wise schedule for Core Competency Training on Evidence-Based Statistics for Economic Development

Day 1 Monday (Jan 06, 2020)	Understanding the context and expectations
Day 2 Tuesday (Jan 07, 2020)	Research design for policy framing
Day 3 Wednesday (08 Jan 2020)	Research design for evaluation
Day 4 Thursday (09 Jan 2020)	Data analytics
Day 5 Friday (10, Jan 2020)	Data analytics
Day 6 Saturday (11, Jan 2020)	Field visit
Day 7 Sunday (12 Jan 2020)	Marketing scope in agribusiness
Day 8 Monday (13 Jan, 2020)	Agribusiness value chain analysis
Day 9 Tuesday (14, Jan 2020)	Project planning
Day 10 Wednesday (15 Jan, 2020)	Project monitoring and evaluation

4 DETAIL REPORT OF DAY WISE TRAINING

4.1 Day 1 Understanding the Context and Expectations

The participants arrived at Bhopal on 5th Jan 2020 and were ready to undergo the rigorous 10 days training at IIFM Bhopal. They were lodged in the IIFM guest house in-campus as per their request. The training began on 6th Jan 2020 at 10.00 am. Mr R Parasuram, IAS (Retd), Director General of Atal Bihari Institute of Good Governance and Policy Analysis, Bhopal and Dr Pankaj Srivastava, Director, IIFM presided over the inaugural session. In the inaugural session, the participants introduced themselves and shared the objective of their visit to IIFM. The training team shared with them the 10 days' schedule. Session 2 and 3 was on understanding the Bhutan socio-political context and development. In this session, training need analysis was carried out using meta-card participatory learning tool and mapped with the programme schedule. It was found that the programme schedule prepared by IIFM largely matched their expectation. The participants also provided an overview of Bhutan development process and governance. This helped to contextualise the teaching sessions to be delivered on coming days. A short briefing on "basic statistics" was provided on-demand, so that all the participants were on an equal footing before the advanced sessions were delivered.

Photo 1: Day 1 presentation photo

4.2 Day 2: Research Design for Policy Framing and Evaluation

Day 2 Introduced to the participants the concept of research design prominently used in creating and evaluating policy. The research process and data collection methods were discussed using a teaching case titled "Co-producing sustainability solutions for bamboo management in eastern Maharashtra" written by the trainers themselves. Further, the evidence collection process to evaluate policy was illustrated. This teaching case was used to explain the process of data definition and design related to measures of governance-related metrics. The process of metric definition, consolidation and interpretation was discussed to create policy-related evidence.

Photo 2: Day 2 session

4.3 Day 3: Evidence Collection Process for Policy Evaluation

Photo 3: Day 3 session

Day 3 introduced the participants to design a research study, preparing a scientific sampling strategy, constructing a composite indicator by assigning weightages and scoring. The teaching case titled, "Evaluating large-scale afforestation projects" was selected for this purpose. Initially, the participants were given an orientation of the IFAD five-pronged evaluation framework with a class exercise. The participants were then walked through the intricacies of selecting a suitable sample size based on the variability across the plantation sites so as to adequately capture the variation with the desired accuracy level. This was followed by orienting them to various methods and tools available to consolidate various success indicators into one success score using weights and scores.

4.4 Day 4 and 5: Data Analytics

On day 4 and day 5 a hands-on training on livelihood frameworks and data analysis methods was provided. The day started by providing an orientation to the three livelihood frameworks namely poverty dynamics by Prof. Anirudh Krishna, DFID sustainable livelihoods framework and BRAC graduation approach. A case study on longitudinal study design and data analysis using a small set of attributes was illustrated. The case titled, "How public microfinance impacts rural livelihoods" under the Government's State Rural Livelihood Mission program were discussed. The participants were provided with the raw dataset and asked to carry out the data analysis using Microsoft Excel to answer specific research questions. They learned data analysis by using statistical metrics and other inference mechanisms. Hand on training on various techniques of data wrangling, cleaning and pivoting were illustrated. The participants practiced the techniques on a live data set provided to them. The convergence of evidence generation leading to new insights into livelihood frameworks was discussed. The data analysis findings and policy recommendations were again linked to the livelihood frameworks for the sake of better understanding.

Day 5: used a Harvard teaching case purchased for the training on the norms set by the HBR case studies, the title of the case was "Data-Enabled Insights from Sericulture: Jayalaxmi Agro Tech (Harvard Business Review - a case study). With the help of the case inference statistics, multiple linear regression was taught, and it was illustrated with the formulation of statistical hypothesis and testing of hypothesis methods, Forecasting and interpretation. Further, illustrated the decision-making process in terms of policy based on the outcomes of various methods.

Photo 4: Day 5 session

Towards the end of Day 5, the research objectives, research questions and data collection tools for the forthcoming field visit were discussed in three sub-groups in-class exercise mode. This was followed by group presentations and based on the discussions and deliberations the research design was finalized.

4.5 Day 6 Field visit (Socioeconomic Data Collection)

A field visit was organized to the rural setting of Ucher village in Raisen district. The participants travelled two hours by bus to take up a socio-economic data collection to answer the research questions of the study they had already framed. The women self-help groups were aggregated into three sub-groups to interact with the three sub-groups of the participants. The participants focussed on select research questions to gain a better understanding of the livelihood scenario by using the three livelihood frameworks.

Photo 5: Ucher village group picture

Various PRA tools, Participatory Wealth Ranking, Focus Group Discussions, Key Informant Interviews and others were implemented to gain a better understanding of the village resource and the progression of the women members of the SHGs. The participants were asked to analyse the data and make presentations subsequently in class on Day 9.

Photo 6: Group picture 1 field visit

Photo 7: Group picture 2 field visit

4.6 Day 7 and 8 Marketing scope in agribusiness and Agribusiness value chain analysis

Under this module, participants were acquainted with Agri based business ideas and scope, Evaluation of business idea based on Mullins 7-domain model was covered, risk in business and how it can be diversified having business portfolio approach, contract farming, Value addition, identification of market for value-added products, some of the government programmes to facilitate farmers or Agri-entrepreneurs etc.

Also, the Agribusiness (Crop & livestock) opportunities were discussed based on the following three categories:

- **Productive Resources** (Input based) like feed, seed, fertilizer, equipment, energy, machinery, finance etc.
- **Agricultural Commodities** like raw and processed commodities of food and fiber.
- **Distribution :** Forward supply chain activities

The scope was also discussed from the point of Primary, Secondary and Tertiary economic activities.

- Tertiary activities which are service activities were discussed in-depth with the examples of successful businesses providing various services to agriculture and allied activities based on technological advancement. These services have huge potential as it can support various players in the Agri entire value chain. Many potential businesses based on facilitative Services like credit, insurance, marketing, storage, processing, transportation, packing, Agri input suppliers/ rental services, Veterinary services, call center, Agriculture research & extension for technical inputs, Cold storage & Warehouse etc were discussed.

Photo 8: Day 8 session

- Various examples of business started in India based on the application of technology in facilitative services or consulting on an improved method of farming like micro-irrigation, Hydroponic technology, in distributing and selling to get a good return and bridging the gap between the point of production and consumption point etc. that are replicable in Bhutan were discussed.
- Certain government support programmes for extending credit facilities or reducing risk and enhancing income like Kisan credit card, microfinance, MUDRA loan, crop & other micro-insurance, minimum support price (MSP) etc. were discussed with the participants.
- Agri-tourism ideas were discussed to design various possible features in Agritourism products/ services and various customer segments that can be targeted to attract tourism. Bhutan is a very small country, the importance of agritourism to increase foreign revenue was discussed. Some of the popular tourism and its product design was discussed that can be adapted at Bhutan like Keukenhof Tulip Garden, Amsterdam, Cheese factory, Amsterdam, Tathagata Farm, Darjeeling, West Bengal, Konyak Tea Retreat, Mon District, Nagaland.

Value addition and value chain analysis was covered to look at the scope of valorisation throughout the value chain. Agri- value chain was also discussed based on Agricultural wastes, Co-products and By-products (AWCB) principles, which aims at creating value from all the waste/ by-products that get generated at various stages of the value chain. This helps to explore opportunities for AWCB utilisation/ valorisation pathways.

Contract farming practices of Pepsi and Nestle taking place in India was also shared with the participants. The AMUL milk dairy case was discussed by Dr Manmohan Yadav towards the end. He had worked in AMUL and shared the process of enterprise development in the last 40 years in AMUL.

4.7 Day 9 and 10 Project planning and Project monitoring and evaluation

Photo 9: Day 9 session

On day 9, the groups presented the findings of the field visit and the extent to which they were able to answer the research questions. Discussions and deliberations were held on the livelihood frameworks as well and the usefulness of conducting similar studies in the Bhutan context. This was followed by an introduction to project planning using the "theory of change" framework. The four elements of the Logical Framework Approach (LFA) i.e. stakeholder analysis, problem analysis, objective analysis and log frame matrix were then introduced to the participants. A class example of "River Rejuvenation" was used to explain the above aspects. This was followed by a hands-on computer session in which Project Libre open-source, freeware tool was introduced and in class-exercise mode, the participants learnt WBS, PERT/CPM, GANTT including the concepts of scheduling, critical path and slack time.

Day 10 was used to cover Program Monitoring and Evaluation. Various frameworks such as the IFAD evaluation framework, WB double-difference approach and others were introduced. Concepts such as counterfactual and attribution were also covered. Two teaching cases Titled "Reviving Himalayan Springs" and "Climate-Smart Village in Madhya Pradesh" were discussed. The participants learned the process of statistically computing program specific outcome indicators and convergence of qualitative and quantitative evidence generation process.

This was followed by a Feedback session followed by a valedictory session chaired by Shri Pankaj Srivastava, Director IIFM in which an informal interaction was held with the participants on what they learnt and how the course can be improved in future.

5 REFERENCE AND MATERIAL USED FOR TRAINING

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12. (2019). Twelfth Five Year Plan 2018-2023. Renewable Natural Resources Sector, Policy and Planning Division, Ministry of Agricuture and Forests, Royal Government of Bhutan.

The details of general feedback about the overall training programme is given in Table 2 below:

Table 2: Feedback summary

S. No	Items	Remarks					
		Fully Relevant	Very effective	Partially relevant	Excellent	Very good	Satisfactory
1	Expectations Fulfilled	13		2			1
2	Relevance of the course content	13		1			2
3	Pedagogy				13	3	
4	General arrangements				16		
5	Academic Input				16		
6	Logistics arrangements				16		
7	Assistance provided by the programme Director				16		

6 FEEDBACK OF SESSIONS TAKEN BY FACULTY MEMBERS DURING 06-15 JAN 2020

The details of feedback to scale of 1-5 (1- very poor and 5 – excellent) is provided in detail in the Table 3 below

Table 3: Feedback details

Title of the Programme: Evidence-Based Statistics for Economic Development - Date: January 06-15, 2020																			
Session	**Faculty Name**	**Time of Session**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**P9**	**P10**	**P11**	**P12**	**P13**	**P14**	**P15**	**P16**	**Mean**
S1	Dr. Amitabh Pandey Dr. Sandeep Tambe	11.30 - 01.00 pm	5	4	5	4	5	5	4	5	4	5	4	5	5	5	5	5	**4.69**
S2	Dr. Amitabh Pandey Dr. Sandeep Tambe	02.00- 03.30 pm	5	4	5	5	5	5	5	5	4	5	4	4	5	5	5	5	**4.75**
S3	Dr. Amitabh Pandey Dr. Jayashree Dubey	03.45- 05.30 pm	5	4	5	4	4	4	5	5	4	5	4	4	4	5	5	5	**4.50**
S4	Dr. Sandeep Tambe Dr. Jigyasa Bisaria	09.45- 11.15 am	5	4	5	5	5	4	5	5	5	5	5	5	5	5	5	5	**4.88**
S5	Dr. Sandeep Tambe Dr. Jigyasa Bisaria	11.30 - 01.00 pm	5	4	5	5	5	5	5	5	5	5	4	4	5	5	5	5	**4.81**
S6	Dr. Sandeep Tambe Dr. Jigyasa Bisaria	02.00 - 03.30 pm	5	4	5	5	5	5	5	5	5	5	4	4	5	5	5	5	**4.81**
S7	Dr. Sandeep Tambe Dr. Jigyasa Bisaria	03.45 - 05.15 pm	5	4	5	5	5	3	4	5	4	5	5	5	5	5	5	5	**4.69**
S8	Dr. CVRS Vijaya Kumar Dr. Sandeep Tambe	09.45- 11.15 am	5	3	5	5	5	5	5	5	4	5	4	4	5	5	5	5	**4.69**
S9	Dr. CVRS Vijaya Kumar Dr. Sandeep Tambe	11.30 - 01.00 pm	5	4	5	5	5	4	4	5	4	5	4	4	5	5	5	5	**4.63**
S10	Dr. CVRS Vijaya Kumar Dr. Sandeep Tambe	02.00 - 03.30 pm	5	4	5	5	5	3	4	5	4	5	4	5	5	5	5	5	**4.63**
S11	Dr. CVRS Vijaya Kumar Dr. Sandeep Tambe	03.45 - 05.15 pm	5	3	5	5	5	4	4	5	4	5	4	5	5	5	5	5	**4.63**
S12	Dr. Sandeep Tambe Dr. Jigyasa Bisaria	10.15 - 11.15 am	5	4	5	5	5	5		5	4	5	4	4	5	5	5	5	**4.73**
S13	Dr. Sandeep Tambe Dr. Jigyasa Bisaria	11.30- 01.00 pm	5	4	5	5	5	5	5	5	5	5	4	5	5	5	5	5	**4.88**
S14	Dr. Amitabh Pandey Dr. Jigyasa Bisaria	02.00- 03.30 pm	5	5	5	5	5	4	5	5	5	5	4	4	5	5	5	5	**4.81**
S15	Dr. Amitabh Pandey Dr. Jigyasa Bisaria	03.45-05.15 pm	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	**4.94**

S16	Dr. CVRS Vijaya Kumar Dr. Jigyasa Bisaria	09.45 - 11.15 am	5	3	5	5	5	4	4	5	4	5	3	4	5	5	5	5	**4.5**
S17	Dr. CVRS Vijaya Kumar Dr. Jigyasa Bisaria	11.30 - 01.00 pm	5	3	5	5	5	5	4		4	5		4	5	5	5	5	**4.64**
S18	Dr. Sandeet Tambe Dr. Amitabh Pandey	02.00- 03.30 pm	5	4	5	5	5	5	5	5	4	5	4	5	5	5	5	5	**4.81**
S19	Dr. Sandeet Tambe Dr. Amitabh Pandey	03.45-05.15 pm	5	4	5	5	5	4	5	5	4	5	4	5	5	5	5	5	**4.75**
S20	Dr. Amitabh Pandey Dr.Sandeep Tambe	12.00- 01.30 pm	5	5	5	5	5	5	5	5	5	4	4	5	5	5	5	5	**4.88**
S21	Dr. Amitabh Pandey Dr.Sandeep Tambe	01.30 - 03.00 pm	5	5	5	5	5	5	5	5	5	4	4	5	5	5	5	5	**4.88**
S22	Dr. Jayashree Dubey Dr. Amitabh Pandey	09.00 - 10.30 am	5	4	5	4	5	4	5	5	4	4	4	5	5	5	5	5	**4.62**
S23	Dr. Jayashree Dubey Dr. Amitabh Pandey	10.30 - 12.00 pm	5	4	5	5	5	4	5	5	4	4	4	5	5	5	5	5	**4.69**
S24	Dr. Jayashree Dubey Dr. Amitabh Pandey	12.00 - 01.30 pm	5	4	5	5	5	5	5	5	4	4	4	5	5	5	5	5	**4.75**
S25	Dr. Jayashree Dubey Dr. Amitabh Pandey	09.00 - 10.30 am	5	4	5	4	5	4	5	5	5	4	4	5	5	5	5	5	**4.69**
S26	Dr. Jayashree Dubey Dr. Amitabh Pandey	10.45-12.15 pm	5	4	5	5	5	4	5	5	5	4	4	5	5	5	5	5	**4.75**
S27	Dr. Jayashree Dubey Dr. Amitabh Pandey	12.15 - 01.45 pm	5	4	5	5	5	4	5	5	5	4	4	5	5	5	5	5	**4.75**
S28	Dr. Jayashree Dubey Dr. Amitabh Pandey	02.30 - 04.00 pm	5	5	5	5	5	5	5	5	5	4	4	5	5	5	5	5	**4.88**
S29	Dr. Manmohan Yadav	04.15 - 05.45 pm	5	5	5	5	4	5	5	5	5	4	4	5	5	5	5	5	**4.81**
S30	Dr. Sandeet Tambe Dr. Amitabh Pandey	09.00 - 10.30 am	5	5	5	5	5	5	5	5	4	4	4	5	5	5	5	5	**4.81**
S31	Dr. Ashish David	10.45 -12.15 pm	5	5	5	4	5	4	5	5	4	4	4	5	5	5	5	5	**4.69**
S32	Dr. Sandeet Tambe Dr. Amitabh Pandey	12.15 - 01.45 pm	5	5	5	5	5	4	5	5	5	4	4	5	5	5	5	5	**4.81**
S33	Dr. Sandeep Tambe	02.30 - 04.00 pm	5	5	5	5	5	5	5	5	5	4	4	5	5	5	5	5	**4.88**
S34	Dr. Sandeep Tambe	04.15 - 05.45 pm	5	5	5	5	5	4	5	5	5	4	5	5	5	5	5	5	**4.88**
S35	Dr. Amitabh Pandey Dr. Jigyasa Bisaria	09.30 - 11.00 am	5	5	5	4	5	5	5	5	4	4	4	5	5	5	5	5	**4.75**
S36	Dr. Jigyasa Bisaria	11.20 - 12.50 pm	5	5	5	5	5	5	5	5	4	4	4	5	5	5	5	5	**4.81**
S37	Dr. Sandeep Tambe Dr. Amitabh Pandey	02.00 - 03.30 pm	5	5	5	5	5	5	5	5	5	4	4	5	5	5	5	5	**4.88**

7 ANNEXES

7.1 Annex 1: The list of Bhutanese officials for Evidence-based Statistics for Economic Development Training, IIFM, Bhopal, India (06 to 15 January 2020)

Sl #	Name	Designation	Agency	Email Address/ contact no
1	Mr. Karma Tenzin	Senior Statistical Investigator	RSD	ktenzin@moaf.gov.bt / 17548808
2	Ms. Kinlay Wangmo	Senior Forest Ranger	RSD	kinlaywangmo@moaf.gov.bt / 17685030
3	Mr. Namgay Dorji	Principal Planning Officer	DoL	ndorji@moaf.gov.bt
4	Mr. Tashi Dhendup	Sr. Livestock Production Officer	DoL	tashidup@hotmail.com
5	Mr.Tshering Tobgay	Sr. Agriculture Officer	DoA	Tsheringtobgay1@moaf.gov.bt /17646818
6	Mr. Kencho Namgyel	Extension Supervisor	DoA	Knamgyel101@gmail.com /17592373
7	Mr. Sonam Wangdi	Sr. Marketing Officer	RNR-EDCU	swangdidamc@moaf.gov. bt
8	Mr. Dorji Rinchen	Sr. Post Production Officer	RNR-RDCU	kazeedeerinchen@gmail. com
9	Mr. Yonten Jamtsho	Statistical Officer	NSB	yjamtsho@paro.gov.bt/ 17616275
10	Mr. Tashi Tshering	Marketing Officer	DAMC	tashitshering@moaf.gov.bt
11	Mr. Jambay Dorji	Sr. Planning Officer	BAFRA	jambaydorji@moaf.gov.bt
12	Mr.Choki Gyeltshen	Sr. Biodiversity Officer	NBC	chokig@gmail.com / 77451022
13	Mr.Megnath Basnet	Sr. Forest Ranger	DoFPS	Megnathbasnet45@gmail. com
14	Mr. Tandin Wangdi	Forestry Officer	DoFPS	tandinwangchuk@moaf.gov.bt 17887202
15	Ms.Jamyang Choden	Forestry Officer	DoFPS	jchoden@moaf.gov.bt

Note: In addition to the above list, Ms. Kinga Wangmo (Project Officer) from local DAI Partner Office in Thimphu participated for the purpose of monitoring and reporting to DAI on the day-to day progress of the training.

7.2 Annex 2: Programme schedule Evidence-Based Statistics for Economic Development Jan 6-15, 2020 at IIFM Bhopal

Day 1 Monday (Jan 06,2020)	Understanding the context
Day 2 Tuesday (Jan 07, 2020)	Research design for policy framing
Day 3 Wednesday (08 Jan 2020)	Research design for evaluation
Day 4 Thursday (09 Jan 2020)	Data analytics
Day 5 Friday (10, Jan 2020)	Data analytics
Day 6 Saturday (11, Jan 2020)	Field visit
Day 7 Sunday (12 Jan, 2020)	Marketing scope in agribusiness
Day 8 Monday (13 Jan, 2020)	Agribusiness value chain analysis
Day 9 Tuesday (14, Jan 2020)	Project planning
Day 10 Wednesday (15, Jan 2020)	Project monitoring and evaluation

Detailed Schedule

Day 1 Monday (06 Jan,2020)				
10.00 – 11.00 am Inaugural session (60 minutes) Prof Amitabh Pandey				
11.00 -11.30 am Photo Session and High Tea				
Understanding the Context				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Session 1 (90 minutes) 11.30-1.00 pm	Interactive Session on Bhutan 12th Five Year – Priorities for Agriculture Sector	• Participatory learning module • Targets and indicators • Results-Based Framework	Understanding of the training needs Contextualizing the training needs	• Dr Amitabh Pandey • Dr Sandeep Tambe
1.00-2.00 pm Lunch				
Session 2 (90 minutes) 2.00-3.30 pm	Interactive Session on Policy and Programmes of the Ministry of Agriculture and Forests	• Participatory learning module • Targets and indicators for programmes and policy • Results-Based Framework	Understanding policy and developmental framework setting	• Dr Amitabh Pandey • Dr Sandeep Tambe
3.30 -3.45 pm Tea				
Session 3 (90 minutes) 3.45-5.15 pm	Interactive Session on Agribusiness in Bhutan: Challenges, opportunities and strategies	• Participatory learning module • Exploring agribusiness scenario in Bhutan • Identifying challenges and existing strategy of agribusiness	Understanding agribusiness context of Bhutan	• Dr Amitabh Pandey • Dr Jayshree Dubey
Local sightseeing in Bhopal 6.00-8.00 pm				

Day 2 Tuesday (07 Jan, 2020)				
9.30-9.45 am Participatory Recap				
Research design for policy framing				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Session 4 (90 minutes) 9.45-11.15 am	Co-producing sustainability solutions for bamboo management **(Teaching case)**	• Research process and design	Understanding concepts for preparing a research plan	Dr Sandeep Tambe Dr Jigyasa Bisaria
11.15-11.30 am Tea				
Session 5 (90 minutes) 11.30-1.00 pm	Co-producing sustainability solutions for bamboo management – **Class exercise**	• Formulating research questions • Designing methods	Developing a research plan to address a policy problem	Dr.Jigyasa Bisaria Dr.Sandeep Tambe
1.00-2.00 pm Lunch				

Session 6 (90 minutes) 2.00-3.30 pm	Co-producing sustainability solutions for bamboo management – **Presentation**	• Developing a research plan	Applying research design skills for addressing the policy problem	Dr Sandeep Tambe Dr Jigyasa Bisaria
3.30-3.45 pm Tea				
Session 7 (90 minutes) 3.45-5.15 pm	Co-producing sustainability solutions for bamboo management – **Interactive session**	• Developing and applying evidence-based policy	Developing and applying research design skills for addressing the policy problem	Dr Sandeep Tambe Dr Jigyasa Bisaria
Local sightseeing in Bhopal 6.00-8.00 pm				

Day 3 Wednesday (08 Jan,2020)				
9.30-9.45 am Participatory Recap				
Research Design for Evaluation				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Session 8 (90 minutes) 9.45-11.15 am	Designing an evaluation of a large scale plantation programme **(Teaching Case)**	Evaluation framework Sampling techniques	IFAD evaluation framework Designing suitable sampling strategies	DR CVRS Vijay Kumar Dr Sandeep Tambe
11.15-11.30 am Tea				
Session 9 (90 minutes) 11.30-1.00 pm	Designing an evaluation of a large scale programme **(Teaching case)**	Build a sampling plan Estimate sample size Drawing sample Indicators, aggregation and scoring	Designing suitable sampling strategies Scoring methods	Dr CVRS Vijay Kumar Dr Sandeep Tambe
1.00-2.00 pm Lunch				
Session 10 (90 minutes) 2.00-3.30 pm	Designing an evaluation of a large scale plantation programme – **Class Exercise**	Preparing sampling strategy Developing criteria weightages and aggregation Planning and evaluation	Applying statistical techniques for developing a scientific evaluation plan	Dr CVRS Vijay Kumar Dr Sandeep Tambe
3.30 -3.45 pm Tea				
Session 11 (90 minutes) 3.45 -5.15 pm	Designing an evaluation of a large scale plantation programme **Class Presentation**	Presenting the evaluation plan (sampling, scoring and evaluation plan)	Develop Preparing a scientific evaluation plan	Dr CVRS Vijay Kumar Dr Sandeep Tambe
Local site seeing in Bhopal 6.00-8.00 pm				

Day 4 Thursday (09 Jan ,2020)				
9.30-9.45 am Participatory Recap				
Data analytics				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Session 12 (90 minutes) 9.45-11.15 am	How public microfinance impacts rural livelihoods? **(Teaching case)**	Livelihood frameworks NRLM programme Microfinance and poverty Data analytics	Livelihood frameworks Information generation through multi-dimension data model	Dr Jigyasa Bisaria Dr Sandeep Tambe
11.15-11.30 am Tea				
Session 13 (90 minutes) 11.30-1.00 pm	How public microfinance impacts rural livelihoods? **(class exercise)**	Generating descriptive and visualization from data	Develop ability to analyse data	Dr Jigyasa Bisaria Dr Sandeep Tambe
1.00-2.00 pm Lunch				
Session 14 (90 minutes) 2.00-3.30 pm	How public microfinance impacts rural livelihoods **(class exercise)**	Formulation of evidence based policy	Analyze existing policy and develop suggestions	Dr Amitabh Pandey Dr Jigyasa Bisaria
3.30-3.45 pm Tea				
Session 15 (90 minutes) 3.45-5.15 pm	How public microfinance impacts rural livelihoods **(Presentation)**	Formulation of evidence based policy	Analyse existing policy and develop suggestions	Dr Amitabh Pandey Dr Jigyasa Bisaria
Interaction Dinner with IIFM Fraternity				

Day 5 Friday (10 Jan, 2020)				
9.30-9.45 am Participatory Recap				
Data analytics				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Session 16 (90 minutes) 9.45-11.15 am	Data-Enabled Insights from Sericulture: Jayalaxmi Agro Tech (Harvard Business Review - **case study**)	Inferential statistics	Formulation of statistical hypothesis Hypothesis testing	Dr. CVRS Vijaya Kumar Dr. Jigyasa Bisaria
11.15-11.30 am Tea				
Session 17 (90 minutes) 11.30-1.00 pm	Hind Oil industries: Demand analysis	Forecasting	Forecasting and interpretation	Dr. CVRS Vijay Kumar Dr. Jigyasa Bisaria
1.00-2.00 pm Lunch				

Session 18 (90 minutes) 2.00-3.30 pm	Rural Livelihood Study	• Livelihood frameworks • Mixed methods	Poverty dynamics, DFID SLF, BRAC Graduation Approach	Dr. Sandeep Tambe Dr. Amitabh Pandey
3.30-3.45 pm Tea				
Session 19 (90 minutes) 3.45-5.15 pm	Rural Livelihood (Planning and Sharing)	Research design Field visit briefing	Objectives, research questions, methods, tools, formats	Dr. Sandeep Tambe Dr. Amitabh Pandey

Day 6 Saturday (11 Jan, 2020)				
9.30-9.45 am Participatory Recap				
Field visit				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Start at 8 am from IIFM **Session 20 (90 minutes) 9.45-11.15 am**	Field visit to village in Sanchi, Raisen District in Madhya Pradesh State, India	Mixed methods Data collection Participatory learning	PRA tools Household schedule Participatory assessment	Dr Amitabh Pandey Dr Sandeep Tambe
11.15-11.30 am Tea				
Session 21 (90 minutes) 11.30-1.00 pm	Field visit to village in Sanchi, Raisen District in Madhya Pradesh State, India	Mixed methods Data collection Participatory learning	PRA tools Household schedule Participatory assessment	Dr Amitabh Pandey Dr Sandeep Tambe
1.00-2.00 pm Lunch				
Session 22 (90 minutes) 2.00-3.30 pm	Group discussion and learnings	• Broad findings • Difficulties faced	Data collection Emerging patterns	Dr Amitabh Pandey Dr Sandeep Tambe
3.30-3.45 pm Tea				
(90 minutes) 3.30-5.00 pm Reach IIFM back at 8 pm	Visit to Sanchi Buddhist Stupa UNESCO world heritage site			Dr Amitabh Pandey Dr Sandeep Tambe

Day 7 Sunday (12 Jan, 2020)				
9.30-9.45 am Participatory Recap				
Marketing scope in agribusiness				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Session 23 (90 minutes) 9.45-11.15 am	Identification of potential Agro-business ideas	Identification of potential Agro-business ideas based on following classification: resources, agro-commodity based, Facilitation based	Able to identify various business associated with agriculture and allied activities	Dr Jayashree Dubey
11.15-11.30 am Tea				

Session 24 (90 minutes) 11.30-1.00 pm	Evaluation of agri-business ideas	Market potential Technical and financial feasibility	Able to evaluate business feasibility associated with agriculture and allied activities	Dr Jayashree Dubey
1.00-2.00 pm Lunch				
Session 25 (90 minutes) 2.00-3.30 pm	Risk identification and mitigation Teaching case	• Identifying internal and external risk • Exploring mitigation strategies to avoid or reduce risk	Able to identify internal and external risk Able to design mitigation plan	Dr Jayashree Dubey
3.30-3.45 pm Tea				
Session 26 (90 minutes) 3.45-5.15 pm	**Exercise in group and presentation**	Identification of potential Agro-business ideas	Developing marketing strategy	Dr Jayashree Dubey

Day 8 Monday (13 Jan, 2020)				
9.30-9.45 am Participatory Recap				
Agribusiness value chain analysis				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Session 27 (90 minutes) 9.45-11.15 am	Value addition	Form, place and sale value addition	Understanding various types of value addition and its application in agro and allied products	Dr Jayashree Dubey
11.15-11.30 am Tea				
Session 28 (90 minutes) 11.30-1.00 pm	Value Chain analysis	Value chain for local, regional, national & international market	Understanding the role of various stakeholders in value chain Analysis of the effectiveness of the chain	Dr Jayashree Dubey
1.00-2.00 pm Lunch				
Session 29 (90 minutes) 2.00-3.30 pm	Business Models	• Private, Public & Private for value addition • Contract Farming	Understanding the suitability of different business models based on business ideas	Dr Jayashree Dubey Dr Amitabh Pandey
3.30-3.45 pm Tea				
Session 30 (90 minutes)	Business Models	Amul business model - a case study	Understanding the cooperative business model	Dr. Manmohan Yadav

3.45-5.15 pm				

Day 9 Tuesday (14 Jan, 2020)				
9.30-9.45 am Participatory Recap				
Project Management – Planning				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Session 31 (90 minutes) 9.45-11.15 am	**Theory of change**	Understanding the "theory of change" project management Tool	Applying "Theory of Change" tool in project planning	Dr Ashish David
11.15-11.30 am Tea				
Session 32 (90 minutes) 11.30-1.00 pm	**Project planning (class exercise)**	Stakeholder analysis Problem analysis Objective analysis	Logical Framework Approach	Dr Sandeep Tambe Dr Amitabh Pandey
1.00-2.00 pm Lunch				
Session 33 (90 minutes) 2.00-3.30 pm	**Project planning (class exercise)**	• Logframe matrix	Logical Framework Approach	Dr Sandeep Tambe
3.30-3.45 pm Tea				
Session 34 (90 minutes) 3.45-5.15 pm	**Project planning (class exercise)**	• WBS • PERT/CPM GANTT Chart	Project Libre software	Dr Sandeep Tambe

Day 10 Wednesday (Jan 15, 2020)				
9.30-9.45 am Participatory Recap				
Project Management – Monitoring and Evaluation				
Sessions	**Topics**	**Coverage**	**Learning Outcomes**	**Resource Person**
Session 35 (90 minutes) 9.45-11.15 am	Monitoring Frameworks for economic development	• Types of monitoring • Result based framework	Develop a monitoring framework	Dr Amitabh Pandey Dr Jigyasa Bisaria
11.15-11.30 am Tea				
Session 36 (90 minutes) 11.30-1.00 pm	• Monitoring and Evaluation Frameworks • Reviving Himalayan Springs (**case study** from Sikkim)	• Frameworks • Application • Evidence based policy making	• IFAD 5-pronged approach • WB double-difference approach • CRELE framework	Dr Sandeep Tambe Dr Amitabh Pandey
1.00-2.00 pm Lunch				
Session 37 (90 minutes) 2.00-3.30 pm	• Climate-smart village in Madhya Pradesh **(Teaching Case)**	• Monitoring framework • Evidence-based take away and programme redesign	• Building contextual monitoring frameworks • Statistics based result monitoring	Dr Jigyasa Bisaria
3.30-3.45 pm Tea				
3.45-5:00 pm (75 minutes)	**Feedback and Valedictory session Prof Amitabh Pandey**			