

Irrigation and Water Resources Department
Department of Agriculture
Department of Horticulture
Land Resources, Soil and Water Conservation Department

State Government of Mizoram

Operational Guidelines For JICA Sustainable Farming System (JIFAS)

January 2023



Project on Capacity Enhancement
for Sustainable Agriculture and
Irrigation Development in Mizoram



Acknowledgement

Government of Mizoram, with the hope of improving our agriculture production, invited JICA to conduct a development study on land and water resources management for twenty months which is followed by a Technical Cooperation Project for five years. JICA Project Team (JPT) have come up with a new farming system called 'JICA Farming System (JIFAS)' to be implemented using different manuals developed during the Technical Cooperation Project.

This new system has been tested and refined again and again through implementation of 'Pilot projects 1 & 2' in selected villages in three (3) RD Blocks. It has been proved to be practical and beneficial for the farmers as there is more interaction between the farmers and government officials right from planning stage to implementation of schemes. This System provides a very systematic collaboration platform amongst the allied departments for convergence planning and implementation of different schemes, including irrigation projects.

I am delighted that this new system, JIFAS is approved by the Government of Mizoram to be the Manual/Guideline for implementation of all agricultural activities in the state. I sincerely thank all the JICA officials, JICA Project Team and officials from Government of Mizoram who have tirelessly worked to formulate this new farming system called JICA Farming System (JIFAS).

I expect JIFAS will be instrumental in our journey towards self-sufficiency in food grain production and hope it will be an important step to bring about the change that all farmers in Mizoram have been dreaming about.



J. Hmingthanmawia

Secretary
Irrigation and Water Resources Department
and
Department of Agriculture
State Government of Mizoram

Introduction



The operational guidelines for the JICA Sustainable Farming System (JIFAS) are the guidelines to be adopted for the implementation of all agricultural-related activities in the state of Mizoram.

In Mizoram, extensive Jhum agriculture (slash-and-burn) has been practiced for a long time. However, due to the decrease in productivity of Jhum cultivation and the rising environmental awareness among the people, settled farming is being promoted in the state using various schemes and programs. Under such situation, the Government of Mizoram (GOM) officially requested Japan International Cooperation Agency (JICA) for a study entitled, "The Study on Development and Management of Land and Water Resources for Sustainable Agriculture in Mizoram" and the study was implemented from September 2013 to May 2015. As a result of the study, the 'Master Plan for Land and Water Resource Development and Management for Sustainable Agriculture (State Agriculture Development Vision 2035)' was formulated and was endorsed by the Chief Minister as the long-term vision and road map of GOM for future agriculture and irrigation development.

Although the master plan of the state was successfully compiled and initiated on some parts, it is observed that organizational capacity of the state to implement the master plan is still low. Therefore, GOM submitted another official request for a technical cooperation project (TCP) to enhance the capacity of the state government officials in order to plan and implement sustainable agriculture and irrigation development according to the master plan. The Record of Discussion for the TCP entitled "The Project on Capacity Enhancement for Sustainable Agriculture and Irrigation Development" was signed between GOM and JICA on 26th October, 2016

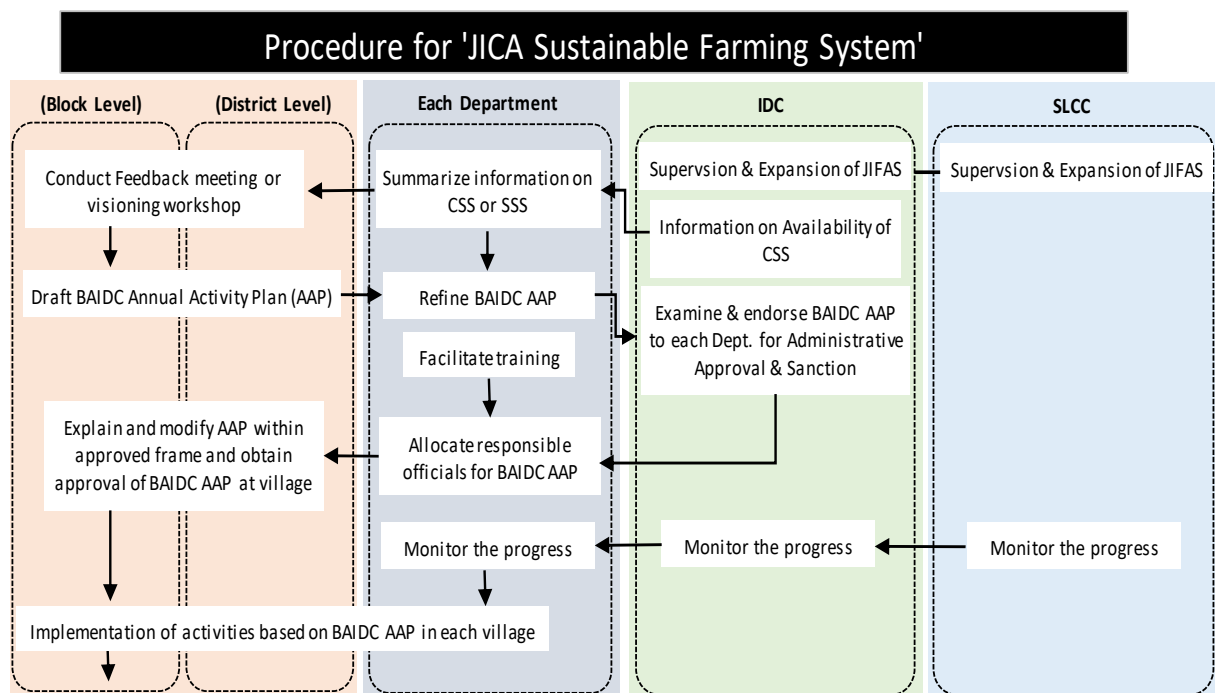
The TCP aims to enhance the organizational capacity of GOM to promote sustainable agriculture and irrigation development and to formulate the Implementation Guideline with Officers' Manuals for a new system. The Irrigation and Water Resources Department (IWRD), Department of Agriculture (DoA), Department of Horticulture (DoH), and the Land Resources, Soil and Water Conservation Department (LRSWCD) are responsible for the implementation of the project. A Project Management Team (PMT) and Block Agriculture and Irrigation Development Committee (BAIDC) were established comprising the officers from those four departments to take charge of the execution of activities with support from the JICA Project Team for smooth implementation of the project with necessary technical advice and close communication through periodical meeting and discussion.

A Joint Coordination Committee (JCC), under the chairmanship of the Chief Secretary, GOM approved this guideline in its meeting on 6th December, 2021. With due approval by a competent authority, the JIFAS is operational with issue of official notification.

Objectives and Characteristics of JIFAS

The aim of operating the JIFAS is to maximize the outcomes of Mizoram's agriculture and irrigation development and sustain the outcomes. The JIFAS has major five characteristics as follows:

- Establishment of committees at different levels including a block level committee (BAIDC) and fostering regular discussion and coordination;
- Accurately grasp the needs and sustain activities by adopting a bottom-up approach;
- Effective use of funds and human resources by operating converged plan;
- Standardization of government services such as agriculture extension, construction management, and enhancement of WUA; and
- Improving work quality through the operation of project cycle management.



The benefit of JIFAS can be summarized as follows:

Major Characteristics of JIFAS		Benefits of JIFAS
(1)	Forming a block-level coordination body	Information can be easily transmitted and aggregated. One-stop support for farmers can be provided It is possible to understand other departmental work and to cooperate as necessary. Officer can work hard with each other to improve their technical abilities.
(2)	Adopting the bottom-up approach	It is possible to accurately grasp the needs and issues of farmers and reflect them in government services. It is possible to change the mindset of farmers in the process of planning. It is possible to build a relationship of trust with farmers
(3)	Operating converged plan	It is possible to carry out extension activities according to the on-site initiative and cultivation plan. Duplication of activities among departments can be eliminated. It is possible to make the activity transparent. The funds and human resources of each department can be used effectively.
(4)	Standardization of government services	Government service quality can be improved and variations in service quality can be reduced. Education and training of staff and skill development will be facilitated. It is possible to explain the service content to the parties concerned.
(5)	Adopting project cycle management	It is easy to monitor and evaluate the activities It is possible to understand what was done and what was not done in the plan, and to be accountable to farmers. The lessons needed for the next plan can be extracted. Awareness is fostered to continuously improve activities.

JIFAS was tested in 3 Rural Development (RD) blocks with funds from JICA and GOM. The government officials and farmers involved in the field test observed the following benefits of JIFAS.

Voice

from on-site implementor

Bottom up approach leads more participation of the farmers

Although some of the crops such as areca nut are the important crop for farmers' cash income, it was not supported by the government since it is not included in the strategic crops of the government. By adopting the bottom-up approach for planning, it can be focused on the real needs of the farming resulting in high participation of the farmers.



Voice

from on-site implementor

The right time activities gives high productivity.

It was possible to provide necessary materials to farmers at the right time by carrying out extension activities in a planned manner. Preparation of BAIDC annual activity plan with proper understand of the farmer's cropping calendar improved the paddy yield above the average of India. The BAIDC achieved above 5 ton in average in Kolasib and Hnalhan.



Voice

from on-site implementor

Jhum to settled farming are more promoted by collaborating departments

In case of Sailam village, DOA and DOH made a joint program to demonstrate profitable slope area cultivation to Jhum farmers. By looking at the merit and feasibility of the slope area cultivation, many have started the slop area cultivation rather than Jhum.



Voice from on-site implementor

The profitability of WRC are more improved by collaborating departments

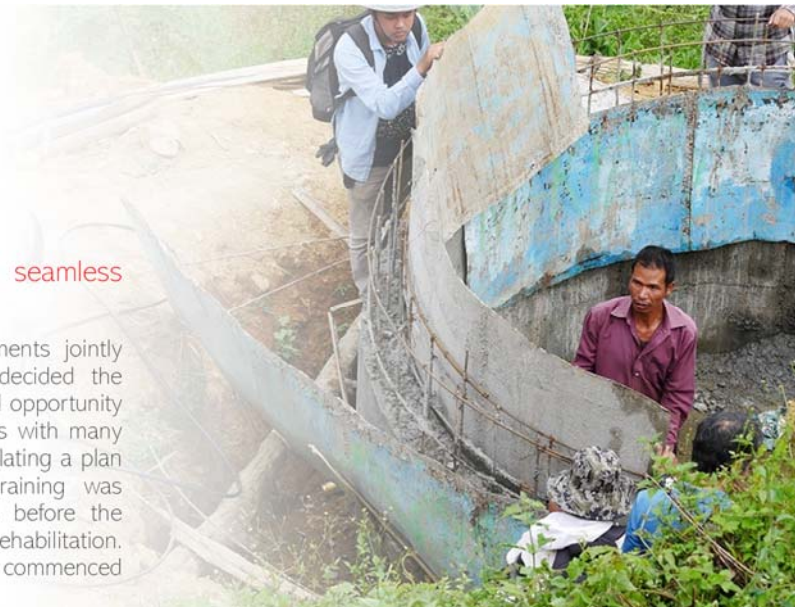
In the first year, the activities of the Kharif and Rabi cultivation support were carried out separately by the two departments of DOA and DOH, but it was found that the cause of the failure of the Rabi cultivation was the delay in harvesting the Kharif crop. By improving the Kharif cultivation, efforts were made to secure the production volume of the Rabi crops.

Voice

from on-site implementor

Convergence plan gives seamless support to farmers

It was good that the four departments jointly discussed with the villagers and decided the activity before starting it. It was good opportunity for villagers to discuss various needs with many experts at one time. By jointly formulating a plan by IWRD and DOH, cultivation training was carried out in three crop seasons before the completion of the irrigation facility rehabilitation. The expected profitable cultivation commenced when the irrigation water started.



Voice

from on-site implementor

Close monitoring improves government services

Through the frequent monitoring by DOH staffs, farmers were able to receive timely advice on pest control and cultivation techniques. In addition, the DOH side was able to obtain information on the desired crops and varieties of the farmers, and the next year's plan became better.

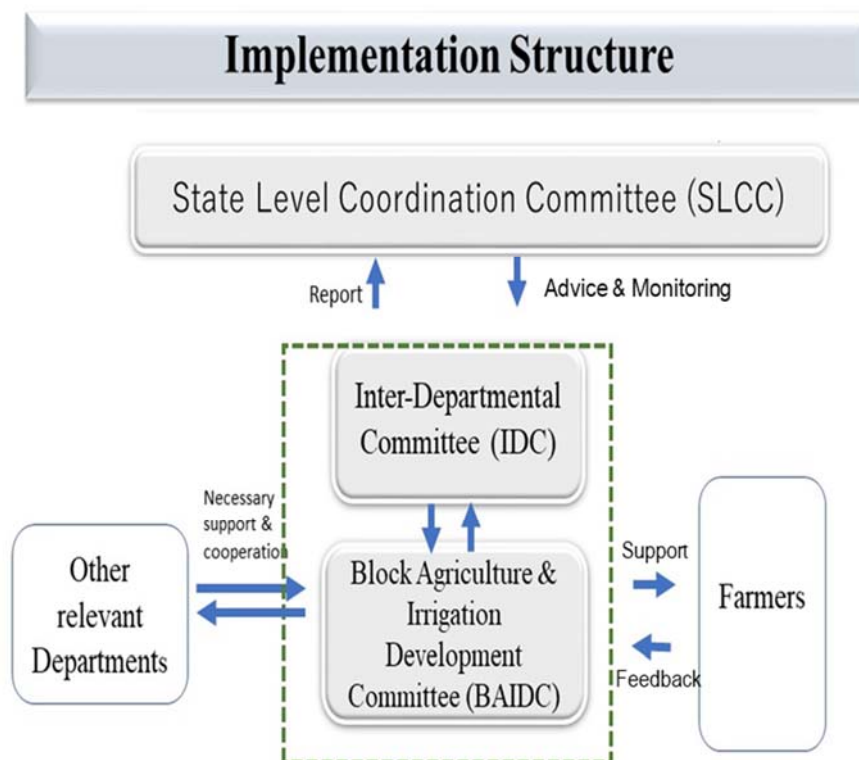


Operational Structure

General

The implementation set-up for JIFAS consists of three layers. The highest level, the first layer, is the State Level Coordination Committee (SLCC), which consists of the Secretary of the Planning and Implementation Department, Finance Commissioner/ Secretary, and secretaries of the four departments. The committee is chaired by the Minister of the Irrigation and Water Resources Department (IWRD). The second layer is the Inter-departmental Committee (IDC), which is composed of the officers of the headquarters in four departments including the directors, additional and joint directors as well as Chief Engineer (CE) and Superintendent Engineer (SE) from IWRD, chaired by the Secretary of IWRD. The third layer is BAIDC, which consists of block-level and district-level officers in four departments.

Apart from these committees mentioned above, the Core Training Officers (CTO) is to be formed under IDC for the smooth operation of JIFAS.



The members and roles of each organization are described below.

Members and Duty of SLCC

The members of SLCC are as follows:

- Minister IWRD - Chairperson
- Secretary of IWRD - Member secretary
- Finance Commissioner/Secretary
- Secretary of Planning and Programme Implementation Department
- Secretary of DoA, DoH, LRSWCD
- Chief Engineer (CWC) or his representative
- Member Secretary, IDC

The main duties of SLCC are:

- Extension of JIFAS;
- Monitoring progress of implementation of the BAIDC Annual Activity Plan (AAP); and
- Give necessary guidance.

The meeting will be held at least twice in a financial year.

Members and Duty of IDC

The members of IDC are as follows:

- Secretary, IWR Department - Chairperson
- Chief Engineer, IWRD - Member secretary
- Director of – DoA, DoH, LRSWCD
- Superintending Engineer (W&D) of IWRD
- Superintending Engineer (P&M) of IWRD
- Addl. Director (CH) of DoA
- Jt. Director (P&M) of DoA
- Addl. Director of DoH
- Jt. Director (Planning) of DoH, and
- Jt. Director (W&M) of LRSWCD

The main duties of IDC are:

- Approve and endorse the BAIDC Annual Activity Plan for making a state-level Agricultural & Irrigation Development Plan and send it to each department for administrative approval and sanction;
- Appoint a chairman and members of BAIDC for each RD block;
- Monitor and evaluate the progress and results of the activities of BAIDC; and
- Conduct/facilitate training to BAIDC members and farmers.

The meeting will be held at least once in one quarter of a year and whenever required.

Members and Duty of BAIDC

The BAIDC should be established in all RD blocks in the state of Mizoram. The members of BAIDC are as follows:

Department	Head of Office/Chairman	Member
IWRD	EE	SDO/SDO(TC), JE, Surveyor, SA
DoA	DAO	ADAO, BAO, AAI, GS
	Sr. Scientist (KVK) / Project Director (ATMA)	Scientist, DPD/BTM, ATM, PA
DoH	DHO	ADHO, BHO, SHD, HD, DHC
LRSWCD	DO	ASCE, RO/SCR, Dy. Ranger, SCD, SCFW

The Secretary of the BAIDC is elected from the district head of the four departments by the BAIDC members.

The main duties of BAIDC are:

- To prepare a long-term plan for village agricultural development;
- To study available funding source;
- To prepare a 5-year village agricultural development plan;
- To prepare BAIDC AAP;
- To send the AAP to the Inter-departmental Committee for approval;
- To implement the approved BAIDC Annual Activity Plan (AAP);
- To nominate the person in-charge for selected villages (person in-charge is to be selected from multiple departments) and MIS operator from each block; and
- To determine the next year's BAIDC AAP.

The responsibilities of each member are described as follows:

Position (No.)	Tenure/Condition	Task
Chairman (01)	One of the heads of office from the line department at the district/block level. The chairman is appointed by IDC and the tenure is two years.	<ol style="list-style-type: none"> 1. To chair the meeting of BAIDC. 2. To hold the meeting as and when required at all concerned RD Blocks in the district with the other line departments. 3. If required, explain the contents of BAIDC AAP to the higher authority. 4. To direct respective officers to start the activities based on the plan after clear

		<p>explanation to the villagers if BAIDC AAP is approved.</p> <ol style="list-style-type: none"> 5. To call for progress review when needed. 6. To direct BAIDC members to update the vision for village agricultural development that are decided to be reviewed within the year. 7. To hold feedback meeting for improvement of next year's activity.
Member secretary (01)	<p>BAIDC members will choose/elect a member secretary among the heads of line departments. The member secretary will hold the post for two years.</p>	<ol style="list-style-type: none"> 1. To facilitate the BAIDC meeting in consultation with the chairman. 2. To maintain record of discussion in the BAIDC meeting. 3. To record activities of BAIDC and inform the upcoming activities. 4. To assist the chairman at the meetings with the higher authority. 5. To act as a liaison officer between IDC, villagers, and BAIDC.
Member	<p>Technical staff of the line departments (and technical officers from relevant departments when required) appointed by IDC.</p>	<ol style="list-style-type: none"> 1. To collect basic information of the villages which are required for the village agricultural development plan. 2. To conduct a workshop with villagers for the preparation of the agricultural development plan through participatory approach (bottom-up approach). 3. To conduct field survey (joint walk-through survey to identify needs, problems, locally available resources, priorities, etc.). 4. To prepare a five-year village agricultural development plan with the farmers. 5. To prepare the BAIDC AAP for the selected villages by collecting information on existing CSS/SSS to decide financial source for BAIDC activities. 6. To go to the villages and explain the draft AAP to the farmers and make changes, if required, after discussion with the farmers. 7. To make necessary modifications if suggestions are given by the IDC. 8. To conduct necessary training to the farmers as and when required. 9. To execute the activities in time according to the prescribed manual.

		<ol style="list-style-type: none"> 10. To monitor the activities at a regular interval based on a prescribed manual, if any. 11. To evaluate the project by collecting necessary data. 12. To establish and strengthen water user association. 13. To enhance the capacity of water user association in the operation and maintenance of the project. 14. To conduct review meeting with farmers to obtain feedback. 15. To participate in progress review when called. 16. To prepare next year's AAP according to the results and feedback obtained from the previous years' activities. 17. To prepare and compile the results of AAP with the viewpoints of relevance, effectiveness, efficiencies, impact to the farmers, and sustainability of the activities. 18. To upload the progress of the BAIDC plans on the MIS-JIFAS.
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Members and Duty of Core Training Officers

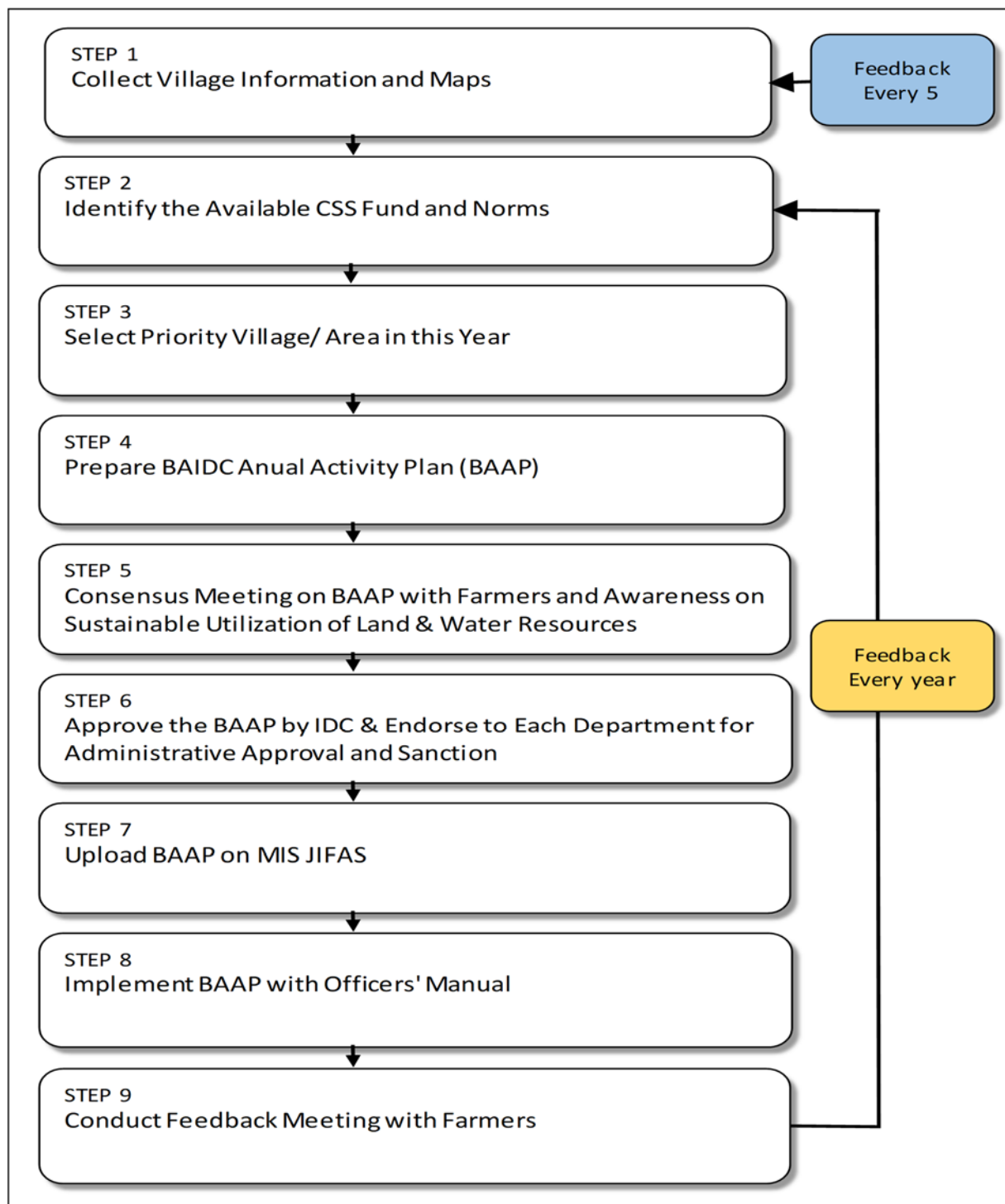
Members: Each department will appoint two or more Core Training Officers (CTO) as seems appropriate.

The main duties of CTO are:

- Conduct awareness and sensitization meeting to BAIDC and IDC and other related government officials on JIFAS;
- Provide necessary training to BAIDC members for smooth implementation of JIFAS;
- Provide necessary advice to BAIDC and IDC on JIFAS, when required; and
- Suggest modification in JIFAS Operational Guidelines, if needed.

Procedure of JIFAS

There are nine steps that should be taken by BAIDC members. Step 1 is performed once in every five years, and steps 2 to 9 are performed every year.



The following table shows the responsible organizations and supporting organizations for the implementation of each step.

Step	Organization In-charge	Support Organization
0-1 Organize trainings/ seminar(s)/ workshop(s) for the state government field staff (Basic Training on JIFAS).	IDC	BAIDC
0-2 Collect and analyze guidelines, manuals, and training materials in specific subjects.	IDC	-
1 Collect and compile village-based data	BAIDC	IDC
2 Identify the available CSS fund and norms and prepare the list of CSS fund for the BAIDC	IDC	SLCC
3 Discuss among BAIDC members and select target village(s)/ area in this year	BAIDC	IDC
4 Prepare the BAIDC AAP	BAIDC	Farmers
5 Consensus meeting with farmers for explanation of BAAP and awareness on sustainable utilization of land and water resources.	BAIDC	IDC
6 Approve the BAAP by IDC and endorse to each department for administrative approval and sanction.	IDC	Each Department
7 Upload BAAP on MIS-JIFAS.	BAIDC	IDC/ Each Department
8 Implement BAAP with the Officers' Manual.	BAIDC	IDC
8' IDC/ SLCC monitor BAAP through MIS-JIFAS.	IDC	SLCC
9 Conduct feedback meeting with farmers.	BAIDC	IDC

The outline of the activities of each step is described as follows:

STEP 1

Collect Village Information and Maps

Compile Village Based Information (Form 1-1)

When the departments of Mizoram jointly implement sustainable agricultural development in the state, it is necessary to have a common data for each village and to update them regularly. These common data can be used for discussions in villages, determination and adjustment of activities between departments, and in the future for monitoring and evaluation of activities.

The data include information on land, socioeconomic, agriculture, and irrigation, and is mainly collected from secondary data or from key informants in the village.

The basic data could be collected from the Indian census and where communication with the village council is being kept. The data is stored and summarized by BAIDC in Form 1-1 below.



VILLAGE PROFILE (RURAL ONLY)
REFERENCE PERIOD : 2017-2018

		Aibawk	Chamring	Chawilung	Falka	
1	Name of Village:					
2	Name of RD Block:	Aibawk	Aibawk	Aibawk	Aiba	
3	Name of District:	Aizawl	Aizawl	Aizawl	Aiza	
4	Distance from RD Block Headquarters (Approximate):	km	0	27	35	
5	Population:	head	1800	364	650	
SECTORS / PARTICULARS		UNIT	REPORT	REPORT	REPORT	RE
A	HOUSEHOLD					
	(a) Household	No.	405	74	135	
B	AGRICULTURE & ALLIED ACTIVITIES					
1	(a) Families pursuing Jhum Cultivation	No.	20	50	36	
	(b) Families pursuing Wet Rice Cultivation	No.	0	2	4	
	(c) Families pursuing both Jhum Cultivation and Wet Rice Cultivation	No.	0	0	0	
	(d) Area under Fruit Crops	Hectare	4.00	23.40	14.20	
	(e) Area under Ginger Crops	Hectare	12.00	20.40	12.00	
	(f) Area under Turmeric Crops	Hectare	0.00	0.00	0.00	
	(g) Total Terraced Land Area	Hectare	0.00	1.00	4.00	
	(h) Area under Tea Cultivation	Hectare	0.00	1.20	0.80	
	(i) Area under Coffee Cultivation	Hectare	0.00	4.80	1.60	
	(j) Area under Rubber Cultivation	Hectare	0.00	11.60	0.00	
	(k) Area under Oil Palm Cultivation	Hectare	0.00	0.00	0.00	
2	Community Water Tank for Agriculture/Horticulture purpose	No.	12.00	30.00	10.00	1
3	Length of Total Agriculture/Horticulture Link Road (Potential Area Connectivity):					
	(i) Motorable (in use)	km	10	5	0	
	(ii) Motorable not usable (dilapidated)	km	5	3	2	
4	Three (3) Major Fruit Crops produced by the Village	Name of Fruit Crops	(i) Orange (ii) Pineapple (iii) Mango	(i) Banana (ii) Orange (iii) Pineapple	(i) Banana (ii) Orange (iii) Pineapple	
C	COMMUNICATION & INFORMATION					
1	(a) Is the Village accessible by motorable road	Yes/No	Yes	Yes	Yes	
	(b) If Yes, Fair Weather Road or All Weather Road	Fair Weather Road / All Weather Road	All Weather	All Weather	Fair Weather	All
	(d) Whether the National Highway passed through the Village	Yes/No	Yes	Yes	No	
	(e) Whether the State Highway passed through the Village	Yes/No	Yes	Yes	No	
2	Public Transport Availability :					
	(i) Maxi Cab (Sumo)	Yes/No	No	No	No	
	(ii) Motor Cab (Taxi) owned by Villagers	Yes/No	No	Yes	No	

Source : Directorate of Economics and Statistics (mizoram.gov.in)

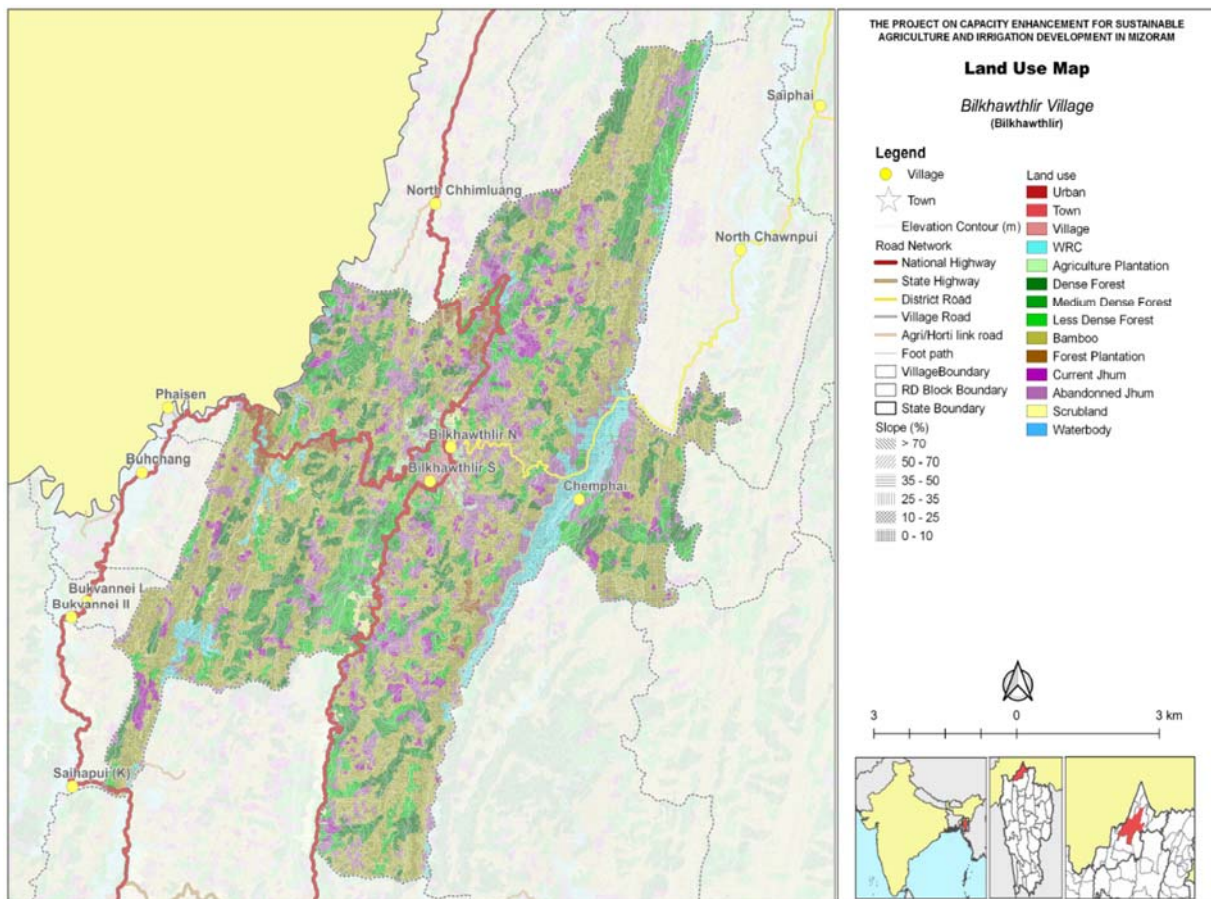
FORM 1-1 Village-based Basic Data (Sample Form)

Prepare Village Map (FORM 1-2)

In addition to collecting basic information, BAIDC members create and store topographic maps for every village within their jurisdiction. These topographic maps are created in geographic information system (GIS) format using the land-use maps and digital elevation model (DEM) data that are open to the public on the web.

The topographic maps may be necessary to renew when new land use information (e.g., from the Mizoram Remote Sensing Application Center (MIRSAC)) is available or when new DEM data is available.

These topographic maps can be used in various aspects, such as planning, coordination of activities between departments, consultation with farmers, and monitoring of activities.



Form 1-2 Village Map (Sample)

STEP 2

Identify the Available CSS Funds and Norms

Identify the Available CSS Funds and Norms (Form 2-1)

BAIDC members, with the help of IDC, will collect and compile information on Centrally-sponsored Scheme (CSS) and/or State-Sponsored Scheme (SSS) that are currently or will be implemented within the target RD block. The collected information is regularly updated and stored in the BAIDC office, and is used to determine priority villages, discuss with villagers, formulate BAIDC activity plans, monitor and evaluate activities.

The collected information may be shared and displayed on a map for each village. The available CSS and SSS will be summarized as shown in Form 1-2.

Form 2-1 Information of On-going CSS and SSS (Sample)

Name of CSS / SSS	Department In-charge	Contents	Districts Implemented
Pradhan Mantri Krishi Sinchai Yojana (PMKSY)	DoA, DoH, and IWRD	Construction of water storage tank, provision of micro-irrigation facility, and training on water management.	All districts
Rashtriya Krishi Vikas Yojana (RKVY)	DoA, DoH, and LRSWCD	Construction of terrace, provision of seeds, fertilizers and chemicals, and training on integrated farm management.	Mamit District (DoH) Mamit, Lawngtlai, Kolasib, Serchhip and Aizawl (LRSWCD) All districts (DoA)
National Food Security Mission (NFSM) oil seeds, and oil palm	DoA	Provision of seed, fertilizer and chemicals and training for rice, wheat, and pulses. Provision of funds for cultivation.	All districts
Mission for Integrated Development of Horticulture (MIDH)	DoH	Provision of seed, fertilizer, and chemicals and training for horticulture crops covering fruits, vegetables, root and tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa, and bamboo.	All districts

STEP 3

Select Target Village/ Area in This Year

Select Priority Villages/ Area

It is desirable to implement this JIFAS in a phase manner from high priority villages rather than targeting all villages at once. For this reason, after obtaining basic information and developing a topographic map, select villages where activities should be preferentially carried out within the villages under their jurisdiction. The selection should be done with the consensus of BAIDC and should be transparent.

It is necessary to clarify the selection criteria in advance and agree within BAIDC. The following should be considered as selection criteria.

- (1) Can consistency with state policies be maintained and funds for activities secured?
- (2) Is the farmer positive about development and diligent?
- (3) High percentage of young self-produced farmers
- (4) Is there basic infrastructure in place for government employees to conduct efficient activities?

BAIDC members need to quantify the criteria after the selection criteria and start activities in villages with high development priority.



STEP 4

Prepare BAIDC Annual Activity Plan (BAAP)

The BAIDC members formulate the “BAIDC Annual Activity Plan” from information collected through Steps 1-3. The BAIDC Annual Activity Plan is a convergence plan aimed at effective utilization of human resources of four departments and effective use of Centrally-sponsored Scheme (CSS) and State-sponsored Scheme (SSS). The plan is used for estimating activity budget, implementation scheduling, monitoring and reviewing of activities.



Preparation of BAIDC Annual Activity Plan

The BAIDC members will formulate a village-based BAIDC Annual Activity Plan that matches the direction of agricultural development of the target villages. In addition, BAIDC members will formulate an annual action plan on how to effectively use the available CSS and SSS funds arranged in Form1-3.

The BAIDC Annual Activity Plan includes the purpose of the activity, approach, expected outputs, contents of activity and implementation timing, executor, target beneficiaries and scale of beneficiaries, cost and fund source.

STEP 5

Consensus Meeting on BAAP with Farmers and Awareness on Sustainable Utilization of Land and Water Resources

Subsequently, after preparation of the BAIDC Annual Activity Plan by BAIDC, the contents of the plan should be shared to the group of farmers in the village to obtain their consensus. BAIDC will listen to the voice of farmers and incorporate in the BAAP as far as possible. The meeting should be arranged through the village council and all the leaders of community-based organizations (CBOs), and farmers who are interested in farm improvement should be invited.



The BAIDC members should explain the BAIDC Annual Activity Plan from development direction of the village prepared based on the workshop with list

of activities. The BAIDC members should also explain the necessity and aim to achieve the listed activities one by one logically to the village members to make them understand the rationality of the BAIDC activities. Explanation materials for easy understanding by farmers shall be prepared in advance.

In the meeting, the monitoring and evaluation method should also be explained to the farmers for their concurrence.

After acceptance of the BAIDC Annual Activity Plan, it will be submitted to the IDC for approval and further necessary action.

Discussion on Present Land Utilization for Cultivation



Mizoram is a mountainous state and most of the places are not suitable for highly productive agriculture. Since most of the farmland is on steep slopes, attention should be paid to environmental conservation, especially, agriculture that suppresses soil runoff. However, many farmers in Mizoram are accustomed to traditional slash-and-burn farming and are not habituated to combat soil loss.

In order to promote settled/permanent agriculture in accordance with the policies of Mizoram, it is, first of all, necessary to change farmers' mindset and hold meetings to raise awareness of effective land use and appropriate resource management.

Those meetings can be completed in about two hours, and expected participants are as follows:

Selected WRC, upland, Jhum farmers, fruit growers, representatives of water users' associations (WUA), farmers' organizations, cooperative societies, community-based organizations (CBOs) and NGOs (YMA, MHIP, MUP, etc.) and members or representatives of the village council. Representatives of religious organizations, schools, private companies/ industries are invited, if necessary.

The BAIDC members will facilitate the meeting. As Jhum farmers utilize the Jhum land only for a short period of time, many of them do not realize the problem of decreased productivity due to soil loss. When the BAIDC members guide the meeting, efforts should be made to give farmers a long-term perspective.

Basically, these discussions will proceed while confirming the location based on the topographic maps that the BAIDC brings. Since contour lines are clearly shown in the topographic map, it is easy to understand the slope of each land, and it is possible to judge the general slope of Jhum land and the general slope of settled slope farmland.

However, the analysis of these topographic maps is generally not understood by farmers. When conducting discussions using topographic maps, BAIDC members need to carefully explain how to read topographic maps and their positional relationships.

The location of the Jhum land collected from the villagers, the location of the settled slope farmland, and the location of the WRC are clearly shown on the topographic map. If discussion on irrigation is being conducted, BAIDC members should describe the water source and the approximate canal route. In addition, information on unused water sources will be collected from the villagers and should be put into writing as necessary.

The State Agriculture Development Vision 2035 formulated in 2015 clearly aims at the transition from Jhum-based farming to settled farming and the promotion of irrigated agriculture with the development of WRC. After collecting the above information and discussion, BAIDC members should raise the issue of decline productivity in Jhum-based agriculture and invite discussions for improvement of Jhum system into settled agriculture even on slopes.

Farmers often only see agriculture from a short-term perspective. As a result, such concerns may not be discussed. When discussing sustainable land use and resource management, BAIDC members should always try to stimulate a long-term perspective.

After sharing concerns about decline in future productivity with farmers, BAIDC members should introduce examples of efforts to implement soil-conservation agriculture practiced in or outside of the state with enlarged photographs.

These examples are only for discussion. BAIDC members should also give enough explanations to the farmers to avoid misunderstanding.

Provide Good Practice for Sustainable Land Use and Resources Management (Figure 5-1)

After looking at advanced approaches to soil conservation agriculture within and outside the state, participants should discuss sustainable land use and resource management directions. Discussions will be conducted under the guidance of the BAIDC members, and farmers will write directions for each type of farming land.

The contents of the discussion will be compiled into the following form and used for subsequent discussions.



Figure 5-1 Introduction of Soil Erosion Control and Conservation Measures In and Out of the State (1/3)

 <p>A photograph showing a terraced paddy field in the foreground, with a dense forest in the background. The text "Afforestation Area" is overlaid in yellow.</p>	<p>Good practice for keeping afforestation area above the paddy field (Kagoshima Prefecture, Japan)</p>
 <p>A photograph of a steep hillside with terraced fields, showing the construction of terraces.</p>	<p>Construction of terrace (Tlamsam Village)</p>
 <p>A photograph of a hillside with a jhum land (shifting cultivation) system, showing the construction of a field.</p>	<p>Changkham at Jhum land in Hnahlan Village</p>

FIGURE 5-1 Introduction of Soil Erosion Control and Conservation Measures In and Out of the State (2/3)

 <p>Stones to block soil movement</p>	<p>Good practice for using mixed cut pieces of grasses to prevent soil erosion (Tokushima Prefecture, Japan)</p>
	<p>Good practice to prevent soil erosion with bamboo and other sticks (Nagaland, India)</p>
	<p>Good practice with using vetiver grass for soil erosion (Meghalaya, India)</p>

FIGUR 5-1 Introduction of Soil Erosion Control and Conservation Measures In and Out of the State (3/3)

<p>Mixing cut pieces of grasses</p> 	<p>Good practice for using mixed cut pieces of grasses to prevent soil erosion (Tokushima Prefecture, Japan)</p>
	<p>Good practice with using vetiver grass for soil improvement (Tokushima, Japan)</p>
<p>Contour farming with mulching</p> 	<p>Good practice for contour farming with mulching to prevent soil erosion (Tokushima Prefecture, Japan)</p>
	<p>“Tsuchiage” practice: Bringing the downside soil back upside (Tokushima Prefecture, Japan)</p>

STEP 6

Approve BAIDC Annual Activity Plan (BAAP) by IDC and Endorse to Each Department for Administrative Approval and Sanction

The Inter-departmental Committee (IDC), composed of the heads of departments and supporting officers from each department, verifies the validity of the BAIDC Annual Activity Plan prepared by the BAIDC, and approves the plan considering the available CSS budget and SSS budget.



After the plan is approved, it will be sent to each department for administrative approval and sanction.

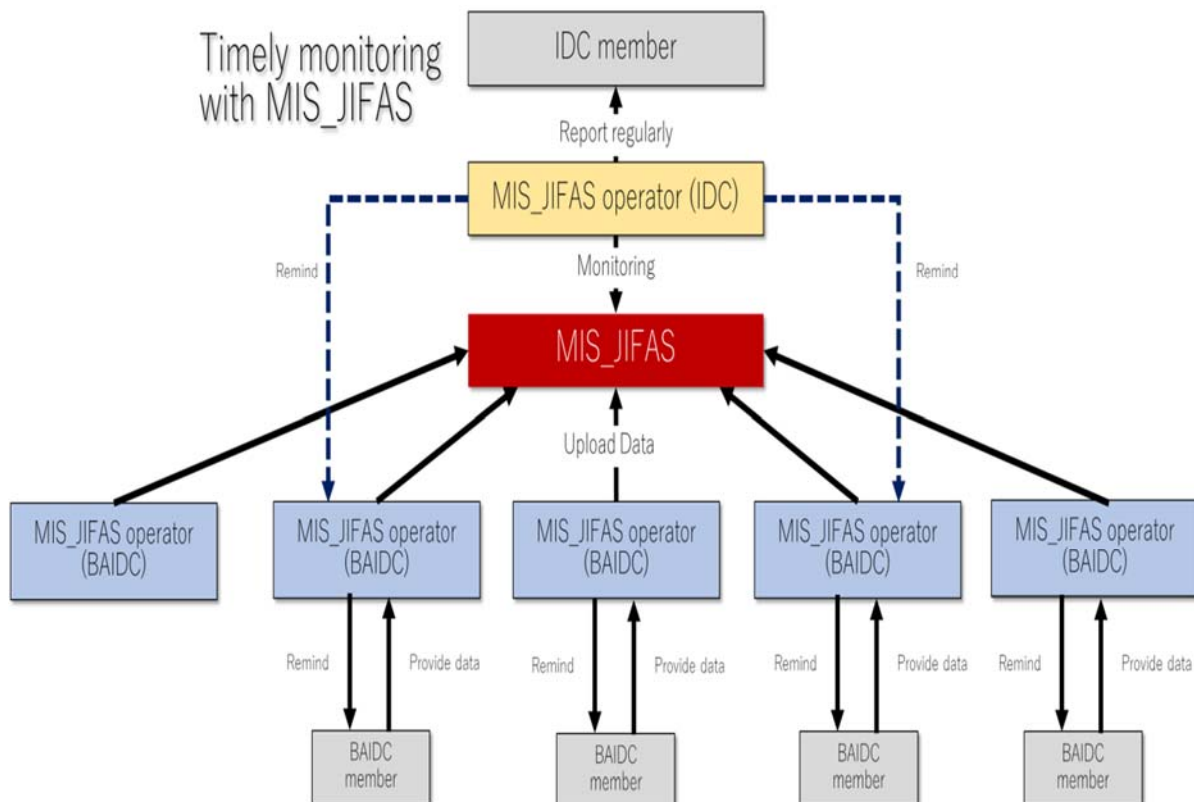
STEP 7

Upload BAIDC Annual Activity Plan (BAAP) on MIS-JIFAS

After BAIDC Annual Activity Plan is ratified by Inter-departmental Committee (IDC) and group of farmers, the BAIDC members will upload their BAAP on the Management Information System-JICA Sustainable Farming System (MIS-JIFAS).

The MIS-JIFAS is a system to be utilised for timely monitoring and information sharing of the BAIDC activities among the counterparts. It can also be used for storing information and data, which can be accessed by the BAIDC members, IDC, and farmers, if necessary. The data and information collected can be utilised for reviewing the progress of each plan and can be exported to prepare reports.

There should be a separate MIS operator from the BAIDC and IDC levels.



Upload data on each step

The screenshot shows a progress monitoring interface with the following sections and callouts:

- General activity of JIFAS (1 SPs)**: JIFAS general activity. Callouts point to steps 03 and 04.
- WRC productivity improvement (Kharif) (2 SPs)**: NFSM. Callouts point to steps 03 and 04.
- Organic, RKVY**: Callouts point to steps 03 and 04.
- Upload village data Sheet**: Points to a data entry table.
- Upload BAIDC Plan**: Points to a Gantt chart showing activity timelines for APR, MAY, and JUN.
- Upload Photos on meeting with famers**: Points to a photo of a meeting.
- Upload Photos on feedback meeting**: Points to a photo of a feedback session.
- Upload Letter of approval from HOD**: Points to a scanned approval letter.



Progress Monitoring

The screenshot displays progress monitoring for three villages:

- Alibawk RDB (15 SPs)**:
 - Alibawk Village (3 SPs):
 - JIFAS general activity: Progress up to step 03.
 - NFSM: Progress up to step 04.
 - Organic, RKVY: Progress up to step 03.
- Lamchhip Village (5 SPs)**:
 - JIFAS general activity: Progress up to step 04.
 - RAFTAAR, RKVY: Progress up to step 03.
 - NFSM: Progress up to step 01.

A red callout box states: "Progress can be seen by anyone who can access to MIS_JIFAS".

Progress Monitoring Sheet of MIS

STEP 8

Implement BAIDC Annual Activity Plan with Officers' Manual

After obtaining the approval of BAIDC Annual Activity Plan by the higher authority and group of farmers, the plan will be implemented using the "Officers' Manual" with "Training Materials of Farmers" by the BAIDC members.

The "Officers' Manuals" consists of three subjects, namely: "Manual for Improving Agricultural Extension", "Officers' Manual for Construction Management", and "Officers' Manual for Strengthening of WUA for O&M of Irrigation Project".

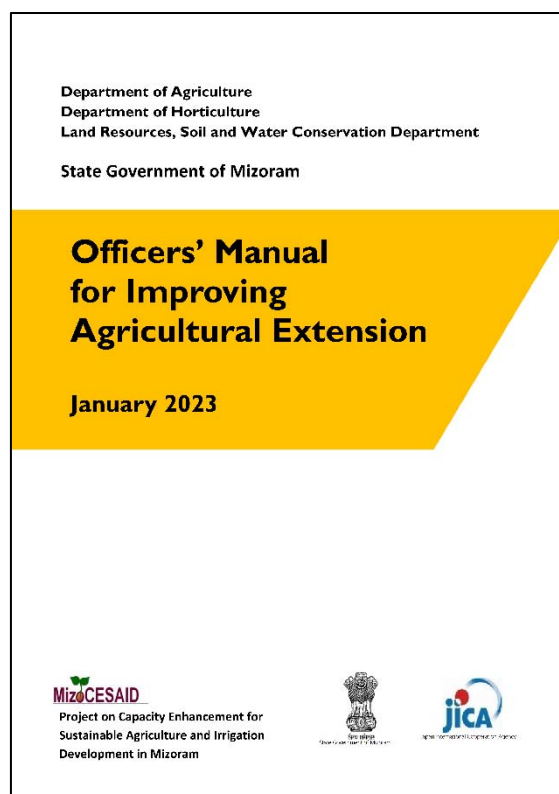
The outline of those manuals is described as follows:

Officers' Manual (1): Improvement of Cultivation Skills and Profitability

OBJECTIVES OF THE MANUAL FOR IMPROVING AGRICULTURAL EXTENSION

In order to ensure sustainable livelihood, farmers need to improve their skills for increase in crop productivity and profitability. In addition, extension practices focusing not only on the general farming practices but also strengthening farmers' ties are required for further development. The main objectives of this manual are to provide the way for:

- Establishment of appropriate farming techniques for more production;
- Implementation of market analysis for stable and profitable farming;
- Dissemination of technologies through planning, classroom lecture, and on-farm training; and
- Strengthening farmers' organizations for further development.



TARGET USERS

The main users of the manual are the BAIDC officials who support the farmers at the village level. Officials at the state level are also required to learn the manual in order to disseminate the methods in the entire state. In addition to the officials, the manual translated into Mizo is useful for farmers who have high motivation for improving their farm economy and learning advanced farming skills.

OUTLINE OF EACH CHAPTER

This manual is composed of four chapters. It can be utilized one-by-one from Chapter 1, or pick up one chapter/session based on the particular condition/s of the target area. The following table describes the outline of each chapter.

CHAPTER		OUTLINE
I	Planning for market-oriented production	This chapter aims at gathering information and helps farmers to better understanding the structural systems of the markets. This includes learning the flow of products, the service providers involved, and knowing the actual and potential markets for their products. A better understanding of the marketing systems will help them in choosing their products and which markets to sell them.
II	Improvement of farmers	This chapter involves helping and guiding the farmers in terms of production methods and techniques through trainings. Also, the development of a trial or demonstration plot is crucial in this step so as to compare the counter activities with that of the conventional one. Field visits should be conducted to exchange ideas among the farmers and government officials. This step explains the importance of monitoring as well.
III	Strengthening farmers organizations	This chapter provides how to establish and/or reactivate highly autonomous farmers organization together with self-management capacity. It is specifically emphasized that farmers organization shall not be guided by a top-down approach but governed by farmers themselves through a bottom-up approach.
IV	Evaluation	All activities done should properly evaluate the results so as to make room for improvement. The performance of both products and farmers should be done constructively to facilitate room for positive change. After reviewing the previous season, planning for the next season based on their experience should be carried out before the start of the next season.

Officers' Manual (2): DPR Preparation Guideline for Irrigation Project

OBJECTIVES OF DPR PREPARATION GUIDELINE FOR IRRIGATION PROJECT

The guideline is mainly focusing on the stakeholders' involvement in the planning process such as the beneficiaries, Department of Agriculture (DOA), and Department of Horticulture (DOH), to encourage and motivate the maximum and proper utilisation of the irrigation facilities and necessary supporting activities from relevant governmental organisations. There are 12 steps for improved DPR preparation.

Step-1 Publication of Irrigation Scheme Selection and Implementation Procedure and Receipt of Application.

Step-2 Preliminary Technical Site Survey for Scheme Selection.

Step-3 Meeting among BAIDC for Selection of Scheme.

Step-4 Endorse DPR Preparation for Selected Scheme by IDC.

Step-5 Establishment of Water Users' Association (WUA).

Step-6 DPR Preparatory Survey.

Step-7 Preparation of Agriculture Action Plan.

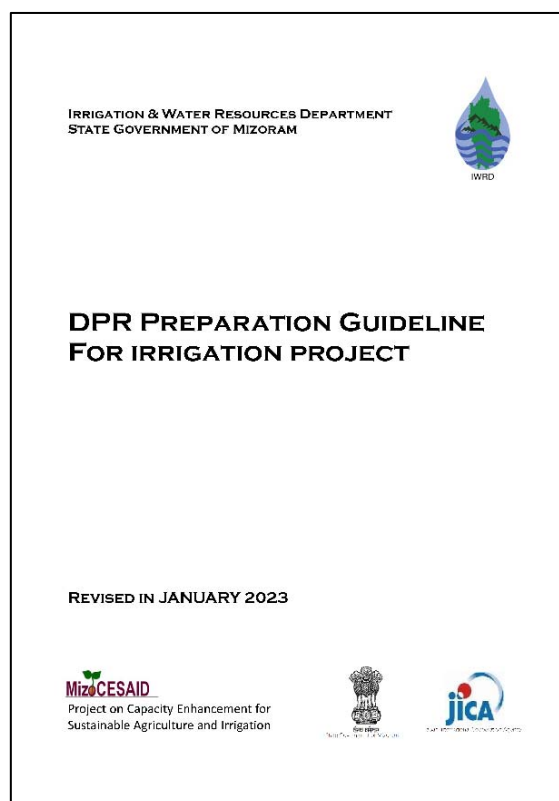
Step-8 Irrigation Planning.

Step-9 Facility Design and Preparation of O&M Plan.

Step-10 Preparation of Construction and Quality Control Plan.

Step-11 Cost Estimation, Benefit and Other Impact Assessment.

Step-12 Consensus Building and Finalization of DPR.



Officers' Manual (3): Officers' Manual for Construction Management

The Officers' Manual, "Construction Management", aims to improve the quality of construction works in mainly irrigation and drainage facilities. The manual has specified five necessary steps to achieve the quality construction work, as summarized as follows:

Step-1 Procurement of Contractor

(1) List of Capable Contractors, (2) Bidding, Contract Award, and Signing, (3) Community Managed Construction Work.

Step-2 Pre-Construction Stage

(1) Construction Management Plan,
(2) Awareness Meetings

Step-3 Construction Management

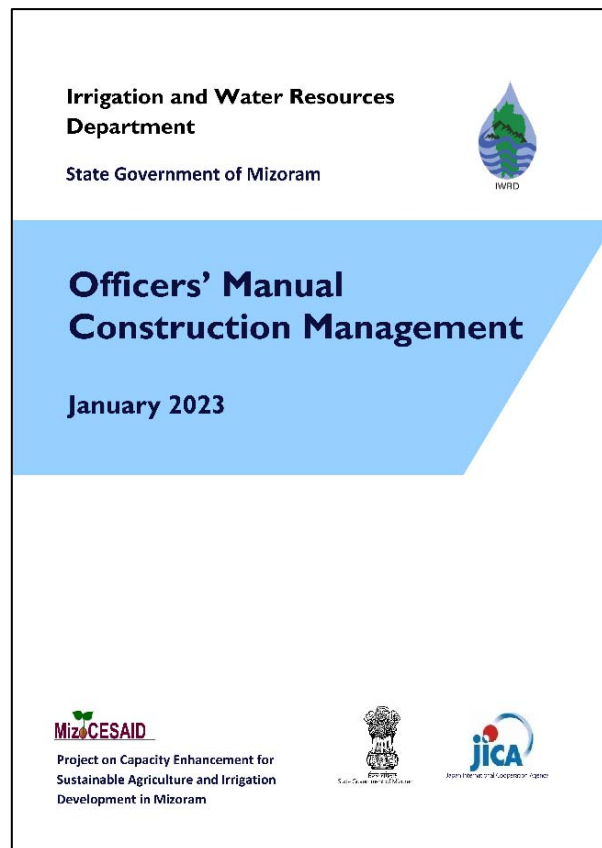
1. Organization, Role, and Responsibility
2. Quality Control of the Work,
(1) Field Inspection by IWRD and Stakeholders, (2) Key Points for Quality Control,
(3) Check Survey and Quality Test at Site and in Laboratory
3. Progress Control and Monitoring of the Work
(1) Periodical Progress Meeting and Monitoring Sheet, (2) Progress Control with Bar-chart and Monitoring Sheet (3) Progress Control with S-Curve, (4) Warning System and Measures in Case of Delay
4. Contractual Matters
(1) Payment to the Contractor, (2) Variation of the Contract Works, (3) Time Extension and Contract Amendment

Step-4 Handing Over the Facility

(1) Conduct Final Inspection by Stakeholders, (2) Issue the Completion Certification, (3) Defect and Liability Period

Step-5 Follow up Activities

(1) Evaluation of Contractors' Performance, (2) Preparation of Completion Report, (3) Recording and Data Keeping



Officers' Manual (4): Officers' Manual for Strengthening of WUA for O&M of Irrigation Project

It is very important to focus not only on construction of irrigation facilities but also on operation and maintenance (O&M).

Focusing on O&M is one of the most important matters to materialize the benefits from the investment.

Under the state government rule, the constructed irrigation facilities are handed over to WUA and empower fully for O&M of the facilities to WUA. Capacity development training should always be given to them before handing those over. The development of technical and management capacity of WUA is an essential and shortcut way to extract maximum benefit from constructed facility with continuous monitoring and support from IWRD.

The outline of each step is summarized as follows:

Step-1 Establishment of WUA and Training

- (1) Awareness and Discussion on the Role of WUA,
- (2) Establishment and Registration of WUA,
- (3) Organizational Capacity Development Training,
- (4) Financial Management Training,
- (5) Technical Training

Step-2 Operation of Irrigation Facilities

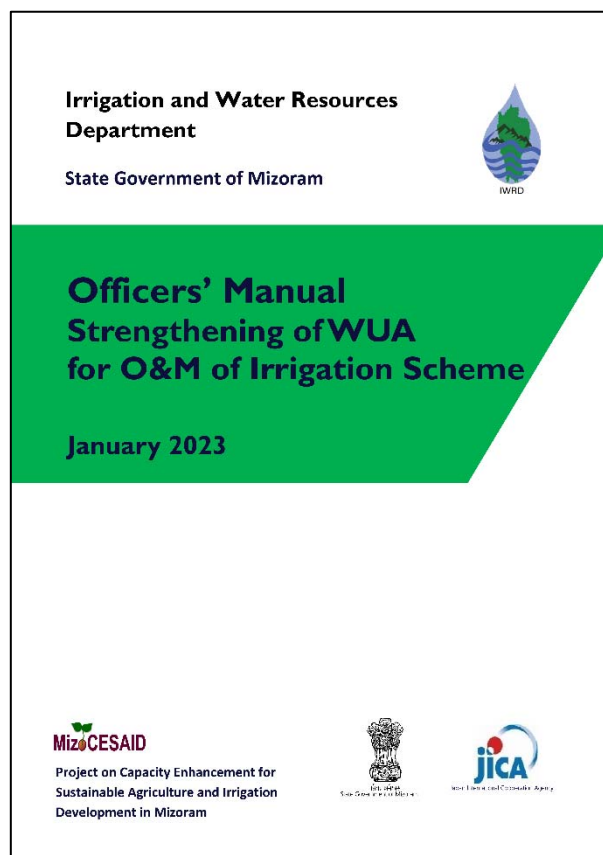
- (1) Water Distribution Plan and Nomination of Controller,
- (2) Normal Operation and Emergency Measures,
- (3) On-farm Water Management,
- (4) Measurement and Recording

Step-3 Maintenance of the Irrigation System

- (1) Preparation of Maintenance Plan,
- (2) Role and Responsibilities,
- (3) Maintenance Activities,
- (4) Budget Allocation and Financial Management

Step-4 Follow-up Activities

- (1) Regular Meeting with WUA and Maintenance Record,
- (2) Update WUA Information



STEP 9

Conduct Feedback Meeting with the Farmers



The progress of each activity of each village can be seen by anyone who can have access to MIS_JIFAS. Therefore, monitoring is performed by SLCC, IDC and each department. However, it is necessary for the State Level Coordination Committee (SLCC) and the Inter-departmental Committee (IDC) to meet once in every three months to supervise and promote JIFAS.

The BAIDC members should hold a feedback meeting once a year with the aim of improving their services through the Plan – Do – Check – Action (PDCA) cycle. Feedback meetings shall be held between January and February. The feedback meeting will bring together the members of the BAIDC to discuss whether they were able to work according to plan, whether the intended outcome was achieved or not, and why. Then, the points to be improved for the next activity are extracted. After the self-evaluation by the BAIDC, the committee goes to the village where the BAIDC plan was formulated and conducts similar discussions mainly with the farmers who participated in the activity.

The contents of the feedback meeting will be summarized in Form 9-1. The BAIDC submits the compiled results to the higher authority as needed.

Form 9-1 Sample Form for Feedback Meeting

Farmers' Feedback for BAIDC Annual Activity Plan 2019/2020 SAILAM, AIBAWK RD BLOCK

Plan		Do & Check			Action	
Activity	Expected Outcome	Approaches	Achieved Outcome	Degree of Achievement	Reasons	Improvement for the next year
1. Support from Jhum ti settled farming	Save farmer's time and efforts for cultivation	<ol style="list-style-type: none"> Show and demonstrate the feasibility of the slope area settled cultivation to foster the transition to settled farming. Promote 2nd year cultivation in Jhum land by testing and dissemination of appropriate techniques such as crop rotation and soil improvement practices. 	<ol style="list-style-type: none"> Spacing of maize was too close Weeding was not done properly Quality of Soyabean was not good and time of sowing was late. Pest such as lizards, wild boars and wild rats attacks the crops JICA activities were really good Weed were more in 2nd year jhum as compared with the 1st year. Training on making manure is needed. Changkham was effective and application of baokashi showed good results 3 pilot farmers will continue and settle in the same area 	<ol style="list-style-type: none"> Excellent Very Good Good Average Poor 	<p>Farmers:</p> <ol style="list-style-type: none"> Maize was harvested early and good for marketing <p>BAIDC:</p> <ol style="list-style-type: none"> They did their activities at the right time 	<p>Farmers:</p> <ol style="list-style-type: none"> Proper marketing channel and threshing machine is needed. Use of locally available soyabean seeds from the village Sailam <p>BAIDC:</p>
2. Improvement of orange productivity	Improve the orange productivity and profitability	<ol style="list-style-type: none"> Improve farming practice by proper pruning and soil nutrient management 	<ol style="list-style-type: none"> The practice of thinning the orange trees showed good result and should be continued. Application of ash on the trunks of the orange tree showed good results The PP chemicals provided were very effective. JICA activities were really good 	<ol style="list-style-type: none"> Excellent Very Good Good Average Poor 	<p>Farmers:</p> <ol style="list-style-type: none"> Active participation and visit from BAIDC is appreciated and is very good Cooperation with BAIDC and applying the training received is good for the farmers. <p>BAIDC:</p> <ol style="list-style-type: none"> We are happy with their activities and we are improving as farmers 	<p>Farmers:</p> <ol style="list-style-type: none"> Booklets on management and treatment of orange trees should be provided for farmers Establishment of cold storage to store and sell oranges for higher prices should be considered Inputs such as fertilizers and PP chemicals should be provided not only to pilot farmers but other farmers also Soil analysis should be done and shared with the farmers <p>BAIDC:</p> <ol style="list-style-type: none"> Handbook of orange or booklet of orange cultivation should be provided to all the farmers.