3.4 Development Strategy

(1) Staged (or phased) Development and Targeting

In view of wide coverage of this Master Plan both in terms of components and area, it is realistic to introduce the so-called staged (or phased) development concept. The final target of the Master Plan has been set in the year of 2020, hence, three development stages are taken into consideration, namely, short, medium and the long terms, for which target years are set at 2005, 2010 and 2020, respectively (See Figure 3-4).

(2) Component-wise Development Method

Development Direction:

In connection with the desired increase of paddy production which is the staple food for Laotian, the method aims to start from introduction and improvement of dry season paddy as the short-term target, and then to stabilize the dry season paddy cropping as the medium-term target, and finally to increase yield of paddy cropping. As to the crop diversification and the integrated farming proposed in the Master Plan emphasis will be given in the accumulation of technical know-how and experiences for both extension staff and farmers throughout the Plan period. This approach will be gradually extended in the adjacent areas until the target of paddy production is attained.

In the promotion of dry season paddy cropping, there may be risks associated with the outbreak of pest and diseases due to low level of farmers' technology. In this connection, the Master Plan recognized that certain varieties resistant to pest and diseases will be introduced and pest control will be carried out while taking environmental impact into consideration. Recent technological breakthroughs on the discovery and protection against pest and diseases through introduction of IPM (Integrated Pest Management) is proposed.

Establishment and Strengthening of Farmers' Organization:

The WUGs (Water Users Group) have been established for the promotion of irrigation schemes in the Study area. In addition, farmers who do not have sufficient collateral are organizing themselves into ACGs (Agricultural Credit Group) to obtain APB's finance. The Master Plan has proposed the establish ment of APGs (Agricultural Production Groups) which will be functioning to efficiently receive public support services and to able to increase bargaining power for selling products as well as buying agricultural inputs. In the short-term, the main focus will be on strengthening the WUGs and the establishment of APGs. Later on, these WUGs will be upgraded to WUAs and the APGs will incorporate several ACGs through strengthening activities in the medium-term target. The APGs will be the sole conduits for APB's financing. In the long-term, it is planned that several WUAs within the same tributary will form a federation of WUA (FWUA) and several APGs will be transformed into agricultural cooperative.

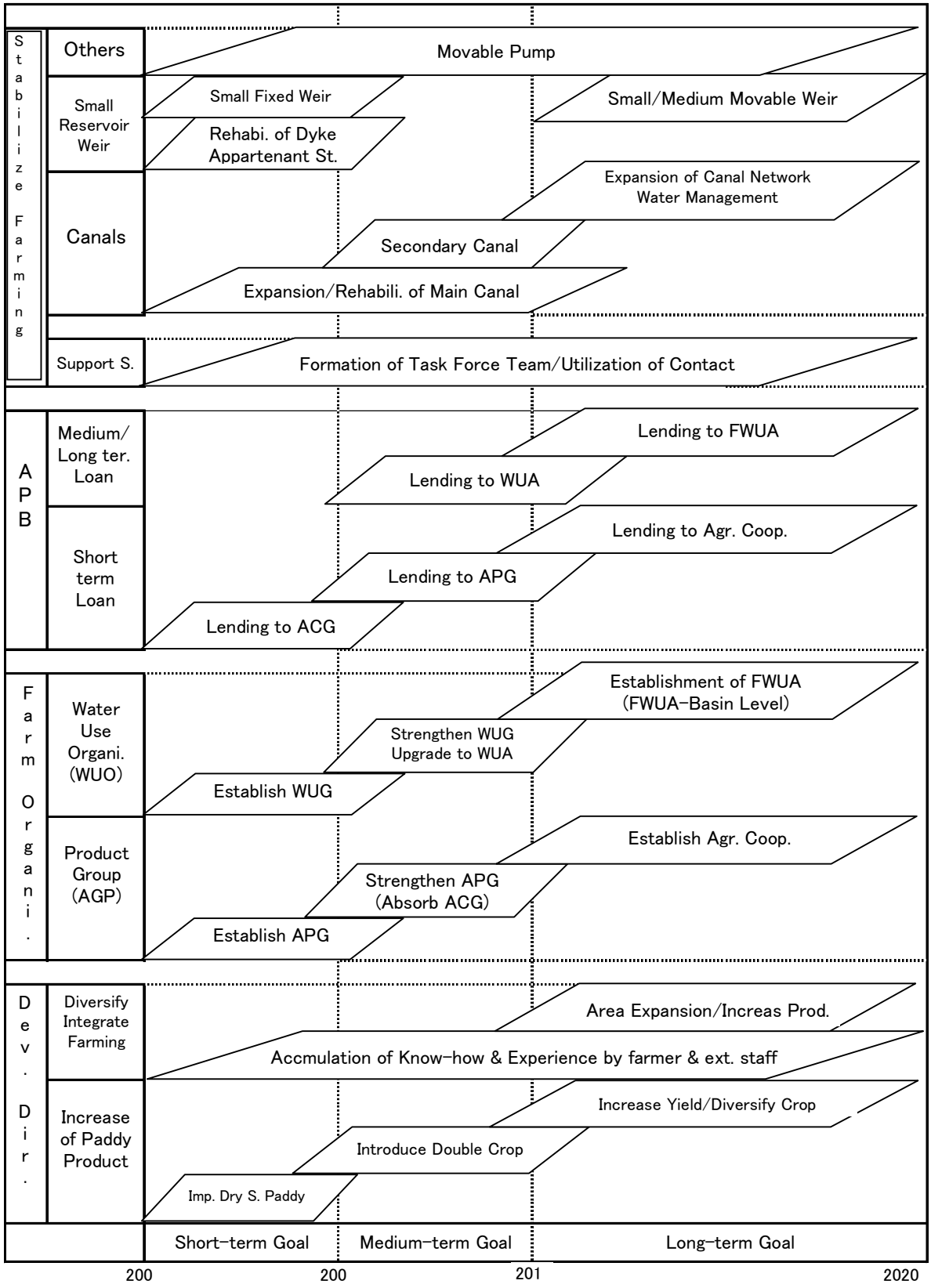

Figure 3-4 Development Target and Strategy

Agricultural Finance:

In line with the movement towards a market-oriented economy and economic liberalization, the present banking system (SOCB) has been reorganized, as follows, establishing the New Lane Xang Bank, New Lao May Bank, BCEL (foreign exchange) and APB (agricultural finance). It is evident that BOL's basic policy on APB will not be drastically changed in the near future, and main issues for the entire financing system are summarized below:

Short-term target: (a) control of hyperinflation, stabilization of foreign exchange market and provision of domestic market for short-term finance; (b) capital fulfillment of SOCBs and revision of accounting manual; and (c) establishment of saving promotion committee in BOL.

Medium-term target: (a) attaining stable economic growth and arrangement of market for medium- and long-term national bond; and (b) establishment of integrated training system for BOL's staff.

Long-term target: abolition of foreign exchange control, and liberalization of financing policy and interest rate; and (b) privatization of SOCBs.

In connection with APB's activities in the Study area, short-term credits like seasonal production loans will be extended mainly to ACGs at the initial stage. It is planned to reduce paper works at the field level by extending loan to APBs and/or agricultural cooperatives in the medium- and long-term target. On the other hand, the necessary fund for constructing new irrigation facilities including their rehabilitation and improvement will be supplied to a legalized WUA in the medium-term target and FWUA in the long-term target from APB. In addition, APB shall extend more services to include lending to farmers or their organization as well as absorbing rural fund as savings through the participation of a task force team (TFT). Hereunder are the main issues on improvement of agricultural finance:

Short-term target: (a) upgrading the MIS function of APB head office; (b) reinforcement of facilities for field offices of branch, SU and SSU in the Study area; (c) increase the number of staff including liaison staff and strengthening of training system; (d) tighten control for loaned money; (e) effective utilization of KR-2; (f) improvement of accounting system and implementation of external audit system with publicizing the results; and (g) effective utilization of external funding (items (a) and (b) are considered manageable using APB's own resource).

Medium-term target: (a) strengthening of committee for agricultural financing policy; (b) revision of policy for interest rate on of institutional agricultural finance; (c) more absorbing activities of rural fund; (d) tighten control for loaned money; (f) supporting activities for farmer organization and establishment of Village Development Fund (VDF); (g) continuation of items (a) and (b) in the short-term target; and (h) expansion of item (b) in other areas.

Long-term target: (a) self-determination on agricultural financing policy; (b) introduction of private capital into APB; and (c) support activities for agricultural cooperatives.

Improvement of Farm Management and Production Increase

Farmer Support Services: In connection with the farmer support system by public agencies in which both human and financial resource are limited, it is planned throughout the plan period that not only a TFT comprising DAFSO and APB's SSU staffs will be formed, which will serve as interface between farmers or their organization and public agencies, but also contact farmers shall be nominated, who will represent the interests of farmers for receiving the support services. The concept and composition of the proposed TFT is presented in Figure 3-5.

Since the number of DAFSO staff is generally limited, it is necessary that every technical staff should take part in extension service delivery for farmers and their organizations at field level, instead of just performing their respective expertise (like farming, irrigation, livestock, forestry). In order to efficiently develop basic and intensive support services capability of the TFT composed of staff from PAFSO/DAFSO and other related agencies, it is proposed to set up a project committee at the provincial level which will support the respective TFTs. The members of the project committee include the administrative officer, extension staff, official of DOC in each province, APB staff, representative of farmer organizations, NGO, and a consultant if necessary.

As to the improvement of canal system, extension and rehabilitation of existing canals will be mainly targeted in the short- and medium-term range. The construction of secondary canals will be considered in the medium-term, and finally, further development of canal network to enable proper water management will be considered under the long-term target.

In connection with gravity irrigation system, rehabilitation of reservoir, dikes and appurtenant structures and installation of small-size fixed weir will be targeted in the short- and medium-term. In the long-term, the construction of movable weir will be considered.

Rural Infrastructure: Rural infrastructure is one of risks identified in the sustainable growth scenario of the agricultural sector. While National Road No. 13 and the connecting roads between the provincial centers are being designed as passable throughout the year, most of other road sections are passable only during dry season. The narrow width and poor structured bridges also limit the entry of heavy-duty vehicles like a cargo trucks. Without solving the said road condition, farmers are forced to bear additional cost for transporting farm products and agricultural inputs, respectively. Therefore, rehabilitation and/or improvement of several rural roads as access road to Route 13 or the provincial roads shall be incorporated in the master plan.

Improvement of Marketing System: The improvement of the existing marketing system is one of the prerequisites to contribute in increasing farm income. It can be expected that commodity flow from on-farm to the center of each province will be improved by providing supporting activity to village middlemen through mainly APB's finance as well as expansion of joint purchase and

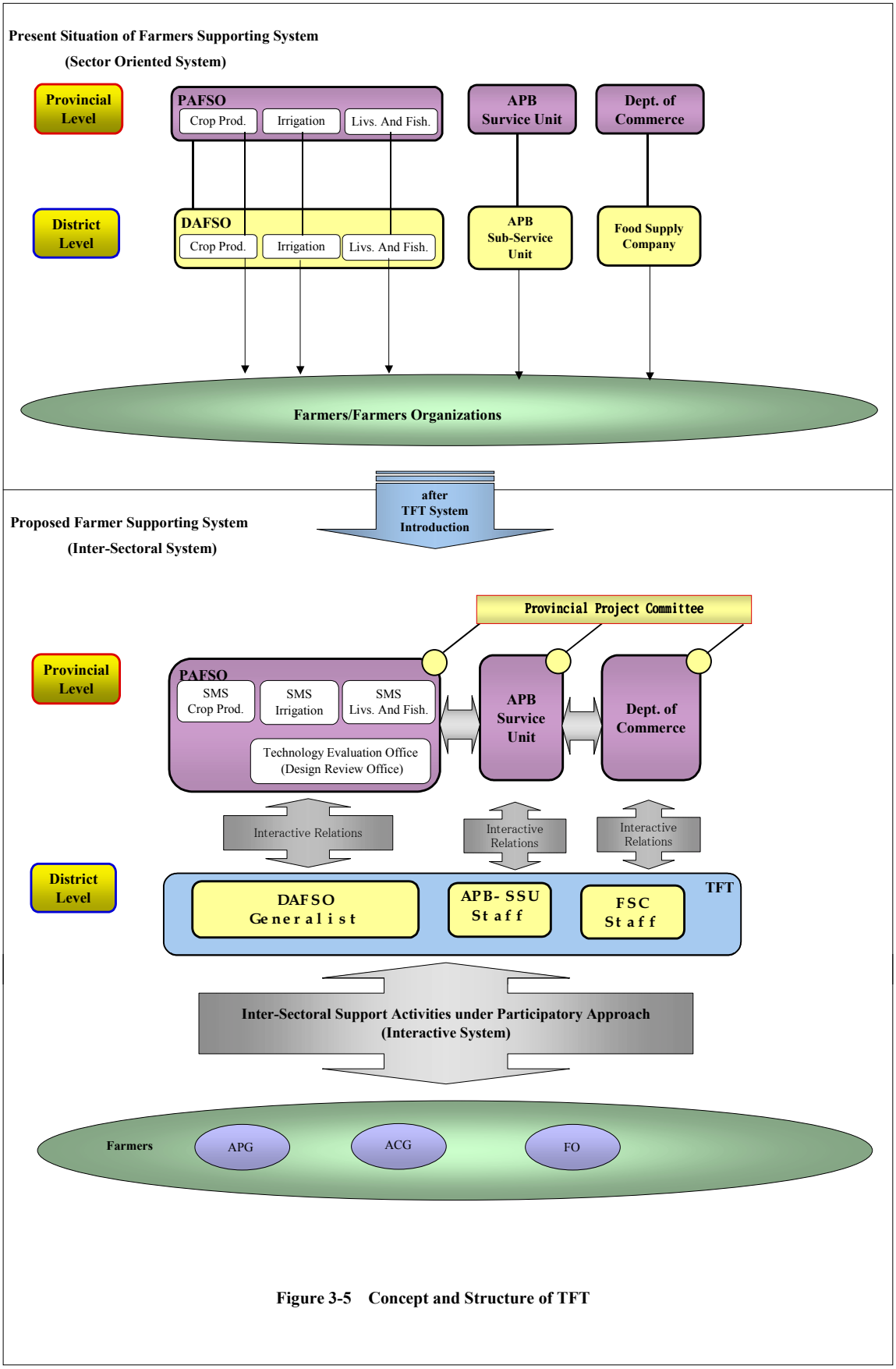

Figure 3-5 Concept and Structure of TFT

marketing with APGs organized by farmers. On the other hand, commodity flow between the provinces as well as between the province and the capital will be improved by allocating the necessary budget for FSC to purchase paddy, and strengthen its capacity for transportation, milling and storage services.

(3) Study on Materialization

(a) Basic and Intensive Development

Following the former political and economic system, the philosophy of egalitarianism still remains in Laos, in which the limited resource shall be equally shared or distributed. As a result, density of support services provided by public agencies become very thinly spread to create impact on the beneficiaries, and as such, it is rather difficult to attain the planned output set by policy makers. On the other hand, excessive reliance of service receivers on public agencies hinders their motivation for independence and self-education.

Under such circumstances and towards the efficient utilization of existing human and natural resources, support services shall be basically and intensively focused to specific area (Model Area) with strategic perspective. The development of Study area will be pursued by applying the best practices experienced in the Model Area.

(b) Project Formulation Using the Participatory Approach

Considering that the top-down development approach is no longer functioning at present, the Study works have been carried with bottom-up approach in mind. Farmers' participation in every step of project planning is encouraged. In Phase I of the Study, Rapid Rural Appraisal (RRA) was conducted in the candidate model areas, and a PCM workshop was done in the selected Model Areas during the Phase II Study period. Through a series of these activities, DAFSO staff has recognized the importance of the bottom-up approach.

(c) Cross-sectoral Development and TFT Concept

The technical capacity of staff in PAFSO/DAFSO is not at a satisfactory level as observed in the collaboration work with them in the field survey as well as the TFT activities. Hence, the Study confirmed the necessity to develop human resource capability of the technical staff in provincial office as SMS (Subject Matter Specialists) while the technical staff in district office will be developed as generalists. This may not fit the existing bureaucratic system under the Laotian governmental policy, however, showing great potential in view of improving the farmer support system.

As one of the measures to put in place the basic and intensive development as well as the participatory development approach mentioned above, the concept of Task Force Team (TFT) is introduced. The TFT shall act as an interface between farmers and public agencies (See Figure 3-5). The main functions of TFT being (a) the link point between farmers and support providers, (b) collection of information from farmer side as antenna of public agencies, and (c) facilitator of activities of farmers or farmers'

organization.

TFT Concept

In connection with the strengthening of farmer support system by public agencies, it is planned throughout the master plan period that not only a TFT comprising DAFSO and APB's SSU staffs will be formed but contact farmers shall be nominated as well who will represent the farmers for receiving the support services. Since the number of DAFSO staff is generally limited, it is necessary that every technical staff should take part as an extension staff for farmers and their organizations at the field level, instead of exclusively performing their respective expertise (like farming, irrigation, livestock, forestry). In order to efficiently develop basic and intensive support services by the TFT comprising PAFSO/DAFSO staff and other related agencies, it is proposed to set up a project committee at the provincial level which will support the respective TFTs. The members of the project committee is consist of administrative officer, extension staff, official of DOC in each province, APB staff, representative of farmer organizations, NGO, and a consultant if necessary. Moreover, a technology evaluation office will be established in order to validate the proposed project. Farmer support services have so far been implemented separately and independently by each sector. Integrated services will then be carried out by introducing the inter-sectoral TFT system as shown below.

The basic strategy of Lao government is to develop an effective farmer support system by upgrading PAFSO staff as SMS and DAFSO staff as extensionist. This policy of government coincides with the proposal of this master plan and immediate enforcement is requested. At present, the technical level of PAFSO/DAFSO staff is unsatisfactory and the shortage of PAFSO technical staff becomes a serious problem causing the failure of many projects. The technical level of PAFSO staff should therefore be continuously improved in order for them to become effective as SMS. This is an important condition in the introduction of TFT. As already mentioned, the technology evaluation office should be functional for the time being. The necessary experts will be allocated to this office and the technical verification of the proposed project will be executed together with "On the Job Training" for SMS.

The following are the basic concept of TFT:

- 1 TFT for every District,
- TFT carries out localized and integrated support services in the model area,
- The experience obtained through TFT activity should be fed back to the extension activity of DAFSO,
- TFT will act as facilitator in the participatory activities, and
- DAFSO staff will be developed as extensionist through TFT activity.

The role and activities of the TFT in this master plan are shown in Figure 3-6. The specific features of the master plan are determined by the many small-scale schemes scattered in the wide range and having their respective specialty. In addition, one important theme reflects the need to efficiently allocate the limited human resources and government budget in line with the current Laotian governmental

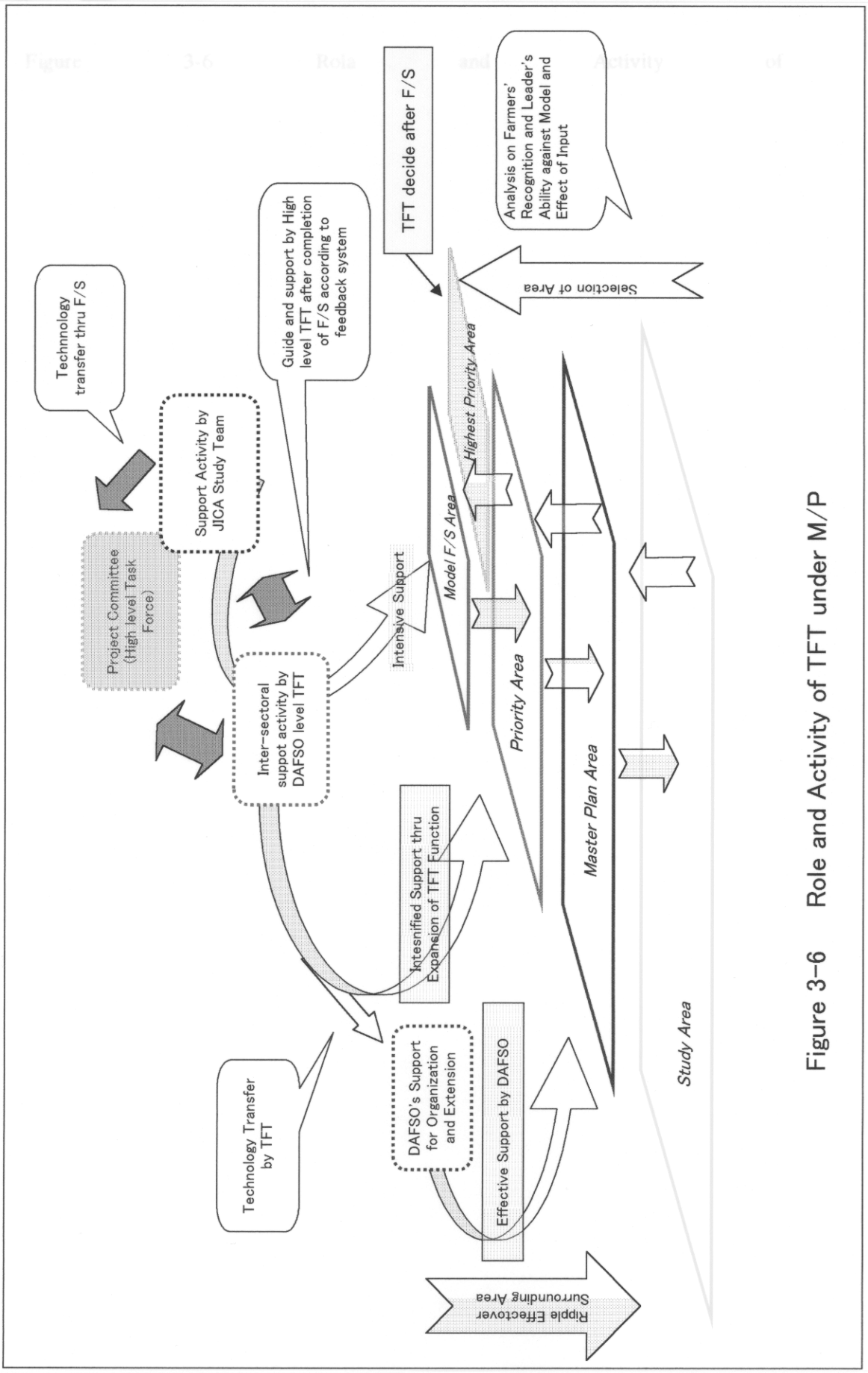

Figure 3-6 Role and Activity of TFT under M/P

financing position. Under such situation, it is proposed to adopt a basic and intensive development approach founded on the participatory principles to attain effective development. This approach follows the construction of spread-oriented networking system in which best practices are shared and demonstration effect is disseminated.

In connection with necessary fund for operating the TFT, it is necessary to have foreign donors' assistance for at least five years or ideally over ten years.

3.5 Selection of Model Area

(1) Objective and Basic Concept

Specific feature of this master plan is participatory approach where beneficiaries will not only share the benefits of the project but share the cost as well. Considering the numerous schemes scattered over wide range of the Study area, the selection of candidate Model Areas, the possibility of developing a model case in terms of increasing productivity and replicability was given serious attention so that Lao government will be able to promote further expansion of the similar schemes through out the country. On the other hand, the regional/area characteristics were identified and classified based on numeric data generated and information gathered by using the format prepared by the Study team.

a) Candidate Model Areas are meant for verification and promotion of efficient and effective program formulated under the Master Plan in the Study area. In other words, the candidate areas shall perform as a pilot project for developing the Master Plan.

b) In implementing the Master Plan with the active participation of farmer-beneficiaries, a village chief or a farmer leader who should be able to guide the villagers should have sufficient capability.

   Community people should recognize the existence of common issues not only identified by simple PCM (problem analysis) carried out by the Study team, but also confirmed under the RRA survey.

c) Farmers share and discuss among themselves that they are able to contribute the common target /goal.

(2) Classification and Approach for Area Development

As one of the steps to realize the component-wise development plans under the Master Plan, the Study area is classified according to its natural and social characteristics. Five (5) classifications have been made based on accessibility to water including volume, flood condition and degree of infrastructure provision as natural condition, and existence of farmers' organizations, farming and living conditions as well as the social condition. In each classification, presently visible issues as well as perceived issues have been identified and ranked from viewpoint of agricultural production.

On the other hand, development approach for the respective classification is studied on the basis of development patterns (improvement of paddy production, crop diversification and integrated farming)

in farm management. Table 3-1 summarizes the results.

(3) Criteria and Selection Process

The selection process for the Model Areas elaborated by the study team follows the development strategies of the Master Plan. Whereas, successful village and irrigation-based agricultural and rural development project depends largely on the needs of the farmer community and on the capacity of the farmer groups to bear the ownership of future infrastructure and system. Taking these issues into account, the selection of model F/S areas was made on village basis.

A total of 96 villages were selected during the first phase of the Study. In these villages, DAFSO staff and others trained by the study team, interviewed village authorities and farmers. The village inventory was designed using the principles of Rapid Rural Appraisal (RRA) with the interview form 1 (village inventory) outlined according to RRA format.

In order to streamline the selection process according to the concept elaborated in the Master Plan, the study team identified additional criteria as follows.

Cross cutting criteria

- High demand of the beneficiaries (farmers) for irrigation development
- Leadership of village chief and capacity of the local authority
- Dynamics and activity of the DAFSO staff in supporting farmers
- Size of the development area (100 ha to 300 ha)
- Number of villages covered by the project
- Accessibility to market (including middleman)
- Accessibility to APB credit
- No benefit extended by other donors
- Poverty level

Specific criteria for each development model

- Water resource management at micro basin level (where pumps were installed or installation is planned)
- Flood hazard during wet season
- Availability of progressive farmers
- Availability of existing communal organizations
- Activity of communal organizations
- Development of irrigation infrastructure and its development level
- Availability of cooperation among farmer groups in the river basin.

Initially, two potential areas in the 12 Districts have been selected after discussions with the concerned PAFSO/DAFSO and applying the said selection criteria. The Study team conducted the first screening considering the condition of accessibility during the rainy season as a major criterion and then

Table 3-1 Classification and Approach for Area Development

Potential	Regional C Characteristic	Existing Facility	Existing Organization	Farming Condition	Issues and Constraints	Development Target	Development Approach
Ample water Resource *Thana*	Access: good Infra: fair	Pump	Existence of WUG & other organization	Double cropping of Paddy Unstable wet season paddy cropping	Present Low irrigation efficiency Lack of farm input Low technical level Disguised Low function due to poor O & M of irrigation system None of replacement due to lack of fund arrangement	Step 1 Sustainable use of existing pump irrigation system and stabilization of double cropping through integrated supporting system Step 2 Introduction of integrated farming with regional condition	Reinforcement of WUO Increase of irrigation efficiency by small-pump Improvement of canal system Improvement of water management and O & M Farmer supporting service Promotion of fishery
Limited water Resource *Thohhak*	Access: good - fair Infra: None - fair	Pump	Existence of WUG & other organization	Partly double cropping of paddy depending on water availability Unstable wet season paddy cropping	Present Low irrigation efficiency Lack of farm input Low technical level Disguised Low function due to poor O & M of irrigation system None of replacement due to lack of fund arrangement Water shortage due to over pump	Step 1 Sustainable use of existing pump irrigation system and stabilization of double cropping through integrated supporting system Step 2 Efficient use of irrigation system by crops with low water consumption Promotion of crop diversification including cash crops	Reinforcement of WUO Increase of irrigation efficiency by small-pump Improvement of canal system Improvement of water management and O & M Farmer supporting service Introduction of cash crops
Limited water resource *Bungwa Phonthan*	Access: good - fair Infra: None - fair	Reservoir Weir	Existence of WUG	Partly double cropping of paddy depending on water availability Unstable wet season paddy cropping	Present Low irrigation efficiency Lack of farm input Low technical level Disguised Low function due to poor O & M of irrigation system None of replacement due to lack of fund arrangement	Step 1 Sustainable use of existing pump irrigation system and stabilization of double cropping through integrated supporting system Step 2 Introduction of integrated farming with fishery and crop diversification with cash crops	Reinforcement of WUO Improvement of irrigation facility Improvement of canal system Improvement of water management and O & M Promotion of fishery Introduction of cash crops
Ample water resource *Vangkhong*	Access: No good - fair Infra: None	None Under study	None of WUG	Only wet season cropping Unstable production due to flood and/or drought	Present None of production infrastructure Damage by flood or drought Lack of farm input Disguised None of possibility for future irrigation development	Step 1 Sustainable dry season cropping through small-size pump and supporting services Step 2 Stabilization of double cropping and integrated farming	Establishment of WUO Construction of small scale pump irrigation system Establishment of water management and O & M Farmer supporting services Promotion of fishery Introduction of cash crop
Limited or none of water resource *None*	Access: No good - fair Infra: None	None	None of WUG	Only wet season cropping Unstable production due to flood and/or drought	Present None of production infrastructure Flooding or water shortage Lack of farm input Disguised Expansion of gap with area where water resource available	Step 1 Stabilization of wet season cropping and introduction of integrated farming Step 2 Promotion of integrated farming	Establishment of APG Farmer supporting services Introduction of cash crops

preliminary field survey for 14 potential areas was undertaken.

After the reconnaissance survey for the 14 potential areas, 6 areas (two areas in each province) were selected, for which RRA study was carried out.

RRA Survey

In the Phase I field survey (wet season), profiles of all candidate model areas were prepared focusing on natural and local condition before the actual screening process. In order to assess the problems identified during the simple PCM workshop among the team members and counterparts in central level, as well as the issues and problems obtained from DAFSO and extension staff and the problems recognized by the farmers, RRA survey was carried out for the candidate model areas. The survey was implemented with the pace of one area in one day using the following workflow:

Self-introduction: At the start, all participants including farmers, counterparts and team members introduced themselves to each other, through which various efforts were made to establish an atmosphere for free talking.

Mapping: On a piece of plain paper, farmers prepared a sketch map showing the cultivated area and residential area with location and alignment of rivers, roads, forest. In this map, location of wells, flooding area, procurement point of natural products etc., was identified and farmers explained the respective situation.

Hearing: By grouping the participants into a leader group, farmer group and women group, and each group was asked to prioritize the three problems having the largest impact in their rural life. The team members asked questions and hearing/sharing on the respective problems from the groups were undertaken.

Field survey: On the basis of a major theme or topic during the preparation of the map and the hearing sessions, participants walked-through the village and surrounding areas to confirm the identified problems and how the farmers themselves intend to solve the problems.

After a comprehensive analysis of all the results obtained from the said activities, the rural activity profile and the development potential profile were prepared. In relation to the specific model area, the profiles were summarized from viewpoints of rural condition, production condition, irrigation condition and development potential.

(4) Role of Model Areas

In order to identify possible development concept in candidate Model Areas, a more realistic and concrete approach was analyzed and examined for the short-term perspective of Master Plan. The approach covers three components, namely, (a) farmer support system, (b) agricultural/farmer finance, and (c) irrigation with four layers of administrative system as village, district, provincial and central

level.

Due consideration has been made on existing limitations particularly on increasing the number of staff in public agencies like DAFSO/PAFSO as well as the central office of related government agency concerned. In this connection, the Master Plan focuses on increasing the efficiency of the limited human resources by supplying such basic requirements as electricity, telephone line, vehicle (probably motorcycle) and office equipment (mainly copying machine) where they are unavailable.

In terms of the irrigation component, basic improvement of physical facilities including rehabilitation is planned taking into consideration the farmers' ability to bear the cost as well as to implement the project. In addition, farmer-beneficiaries shall be fully responsible for operation and maintenance of physical facilities including the establishment and management of a Village Development Fund with support of APB's S.S.U./S.U./Branch Office.

(5) Outline of Model Area

On the basis of the above procedures and results, one model area has been selected in each the three provinces. The outline of these model areas is as follows:

B. Thongharb-Nakhua, Pakkading district: basin water management and agricultural finance promotion model

Problem	Development Idea
- Although three pumping stations in five villages exist in the same tributary (Nam Dua), their pumps cannot be used effectively due to unstable water flow in dry season. - Dry season irrigation area is also limited due to insufficient dry season water flow.	- Concept of basin water management will be introduced into related villages for effective use of water resources and conservation of basin natural resources. - Small-scale weir might be constructed so as to secure stable pump operation. - WUOs of the villages will be strengthened for effective use of natural resources in the basin.

B. Vangkhong, Hinboun district: integrated irrigation scheme development and poverty alleviation model

Problem	Development Idea
- Although the plan for the installation of pumps is underway, farm development plan involving in irrigation scheme and farming practice has not been prepared by the villagers yet.	- Canal system will be constructed in line with integrated farming plan. - Villagers will be trained for managing their own resources. - WUO will be established for sustainable farming and operation and maintenance of irrigation facilities.

B. Phonthan, Xaiphouthong district: micro basin water conservation and advanced farming model

Problem	Development Idea
- Capacity of two reservoirs do not conform with water resources potential in the watershed. - Irrigable area is small due to limited water resources, lack of reservoir capacity, lack of canal system.	- Reservoirs will be upgraded considering the development plan for irrigation scheme, village-based reservoir operation and management, watershed resources management, introduction of fishing and marketable crop.. - WUO will be restructured and strengthened for sustainable operation and maintenance of reservoir, irrigation system, watershed resources management.

The above model areas received the highest priority from viewpoints of urgency, high potential benefits, replicability and far-reaching effect, among others. In these model areas, the short-term target (2000-2005) of the Master Plan will be focused and implemented. The model areas will play a vital role to provide an opportunity by which the TFT concept will be tested. In the field survey of Phase II Study, TFTs exerted maximum effort to contact farmers and farmers' organization at the field level to collaborate and work with the Study Team members. It is believed that members who participated in the TFT activities have recognized the potential role of TFT in future.