

Status and Capacity of Farmer Training Centers (FTCs) in the Improving Productivity and Market Success (IPMS) Pilot Learning Woredas (PLWs)

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1. Introduction

1.1 Background

Agriculture is the foundation of Ethiopian economy. The sector is dominated by smallholders with an average holding of about a hectare. The production systems are primarily subsistence-oriented, natural resource-intensive, low input –low output, and rain-fed systems. The aim of the agricultural development strategy of the country is achieving food security, improved rural livelihoods, and ensuring sustainable management of natural resource. The transformation of the smallholder production systems into more market-oriented and ecologically sustainable paths are seen as means to achieve this aim. A strategic shift to knowledge- and information–intensive systems is thus critical for the realization of the objectives within changing demographic, ecological and market conditions.

Resource-poor and women producers need responsive and effective agricultural knowledge and information services to help them increase their income, improve livelihoods, and ensure sustainability by enhancing their resource use efficiency (water, forest, cropland and grazing land). Accordingly, the mandates and the roles of agricultural extension services have expanded. Whilst the traditional focus on the intensification of staple food production remains, the objective should be to maximize return. Extension services should be able to reach and help resource poor producers/interest groups in articulating needs, accessing knowledge, finance, services and market so that they will be able to successfully participate in and

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benefit from high value crop and livestock and other enterprises with expanding market demand.

In addition, the policy of economic liberalization, decentralization, and agricultural transformation with a focus on smallholder commercialization and export-orientation will make the delivery of extension services complex, and indeed more knowledge- and information- intensive. Agricultural extension should deliver services that can meet specific needs in diverse agro-ecology and socio-economic contexts to sustainably increase productivity, to stimulate diversification into high value products, to shift into value addition, and to enhance smallholder competitiveness in both domestic and export markets.

In Ethiopia, where public agricultural extension remains dominant and pluralism in the service delivery is just emerging; strengthening public agricultural extension has received due policy attention. Since 2004, more than 60,000 DAs (Development Agents) were trained in 25 agricultural technical and vocational education and training (ATVET) colleges to serve in the public extension. Thousands of farmer training centers (FTCs) have been established by government with substantial contributions from rural communities. The Ministry of Agriculture and Rural Development (MoARD) planned to establish at least 15,000 FTCs, one in every rural kebel. About 8, 500 FTCs have been built so far and about 45,000 DAs are engaged as service providers in these FTCs¹.

The establishment of FTCs and the accompanying strategy and guidelines of the Ethiopian MoARD suggest the beginning of a strategic shift towards knowledge-based approach to smallholder agricultural development as well as a shift from a sole focus on the transfer of technology (ToT) to emphasis on human resource and social capital development. This approach, if effectively implemented, can empower

1.Ethiopia, MOARD (Ministry of Agriculture and Rural Development). 2009a. DAs and FTC data at national level. Addis Ababa, Ethiopia: MOARD.

smallholder farmers and pastoralists, and in the long-run can enable rural households and communities to solve their own problems.

While FTCs and the assignment of thousands of graduates as staff in these centers represent huge resource and opportunity to move forward, making the FTCs functional, responsive, effective and dynamic remains a real challenge. According to MoARD (2009), about 2,500 (30%) out of 8,500 FTCs were somewhat functional. Public extension and the FTCs often lack adequate basic infrastructure and facilities, skills, funding for operational costs, appropriate approaches and tools, and linkages for accessing knowledge and information.

1.2 Purpose and objective

FTC-based modular farmer training is an emerging model that has been introduced by the MoARD to the public agricultural extension system in Ethiopia. Strengthening the capacity of FTCs and enhancing FTC-based training and knowledge services is important to leverage and optimize potential contributions of FTCs to facilitating market-led and knowledge-based agricultural transformation. Hence, to complement government efforts and to contribute to the transformation of FTCs into vibrant 'knowledge and innovation centers', IPMS (Improving Productivity and Market Success) project supported 40 FTCs in the 10 Pilot Learning woredas or PLWs (i.e., four 'model FTCs' from each PLW) to "experiment" with some additional interventions intended to increase the efficiency and effectiveness of FTC staff and resources.

The interventions to strengthen and enhance the role of the selected FTCs include:

- DA capacity development through formal in-service training and knowledge sharing and learning events such as study tours, exhibitions, participation in commodity platforms, etc;
- Infrastructure capacity development by equipping FTCs with computers, printers, audio-visual equipment (TV sets and DVD players), generators

- and/or connection to national grid, and facilitating telephone and internet connections;
- Content based capacity development by developing training and extension materials (textual and audiovisual) and
 - Technical assistance and linkage facilitation services, and;
 - Financial support for irrigation equipment, demonstration materials and utilities.

This assessment was made to document project experience and to identify good practices and lessons so as to inform similar initiatives in the future. A survey was carried to take stock of the capacity of all FTCs in the project operation Woredas (i.e., FTCs supported by the project (henceforth 'IPMS FTCs') as well as other functional FTCs (hereafter 'Other FTCs') in the 10 PLWs). The investigation specifically looked into human, physical and other resources in the FTCs and extent and efficiency of utilization of these resources as well as training programs conducted at FTCs in order to gauge whether IPMS support has helped to enhance the services provided by FTCs.

This report presents the assessment results. The next section, Section II, outlines the methods employed to collate pertinent data and analyze the data. The survey results are presented and discussed in Section III. The summary of good practices and lessons learned, and some concluding remarks are presented in Section IV.

2. Research Method

The FTCs covered by the study were from IPMS Pilot Learning Woredas (PLWs) in Amhara (Bure and Fogera), Oromia (Ada'a, Miesso and Goma), Southern Nations, Nationalities and Peoples (Alaba and Dale) and Tigray (Atsbi and Alamata) Regions. The survey was carried out employing a pre-tested semi structured interview instruments during July – November 2010.

In total, the survey covered 159 FTCs and interviews were conducted with 447 DAs working at the FTCs (Table 1).

Table 1: FTCs and Development Agents (DAs) covered by the survey

PLW	IPMS FTCs	Other FTCs	Total
Atsbi	4	12	16
Alamata	3	2	5
Fogera	4	16	20
Bure	4	16	20
Ada'a	4	19	23
Miesso	4	1	5
Goma	4	13	17
Alaba	4	27	31
Dale	4	18	22
Total FTCs	35 (22%)	124 (78%)	159 (100%)
Total number of DAs	104 (23.3%)	343 (76.7%)	447 (100%)

The data analysis was first done at PLW level and then aggregated to show the status of FTCs across the PLWs. Maps showing IPMS supported FTCs and other FTCs in the ten PLWs are annexed.

Simple frequency tables and charts were used to summarize the quantitative survey data, whereas qualitative data were systematically categorized, summarized and discussed. Recent progress reports by the PLWs provided supplementary information for illustrating certain issues.

3. Results and Discussion

Development agents at the FTCs have important roles and are expected to perform several tasks (MoA, 2009)². The key services and related roles and functions of these frontline extension agents can be categorized into four:

1. **Educational/Training** (conducting certificate and non-certificate farmer training),
2. **Extension** (promotion of the use of improved technologies and practices),
3. **Informational** (gathering, organization and dissemination of information relating to market, weather, etc), and
4. **Advisory** (helping in solving individual farm-management problems and addressing other community concerns like natural resource management)

Given the ever expanding mandate of agricultural extension and the roles of DAs, investment in the physical infrastructure of FTCs, upgrading the qualification of DAs, and introducing innovative approaches and tools are crucial. These are required to make agricultural extension relevant to the commercialization process and to meet the need for responsiveness and provision of effective services envisioned in the expanded mandate of the extension system.

This Section presents and discusses the assessment results about the status and capacity of IPMS supported FTCs and other functional FTCs in the same PLWs. The section is organized under five subheadings, dealing with:

1. Human resource and capacity,
2. Demonstration facilities and uses,
3. Training materials and
4. ICT tools and uses,

² Federal Democratic Republic of Ethiopia, MOARD (Ministry of Agriculture and Rural Development),. Agricultural Extension Department. 2009. Farmers' Training Centers Operational Manual/Guidelines, October 2009, Addis Ababa, Ethiopia: MOARD.

5. Training and other knowledge sharing activities

3.1 Staff capacity at the FTCs

The existence of sufficient number of well trained, experienced and motivated DAs is an important determinant of the relevance and effectiveness of FTCs. At the time of the survey, there were 447 DAs of which about 12% were females. The average number of DAs per FTC was 2.81 (Table 2), indicating that most of the FTCs had three DAs as per the plan of the ministry.

The composition of DAs in terms of fields of specialization (crop sciences, animal sciences and natural resources) are more or less the same (Figure 1). About 49% of the DAs reported that they had attended training on computer use (68.3% at IPMS FTCs and 42% at other FTCs).

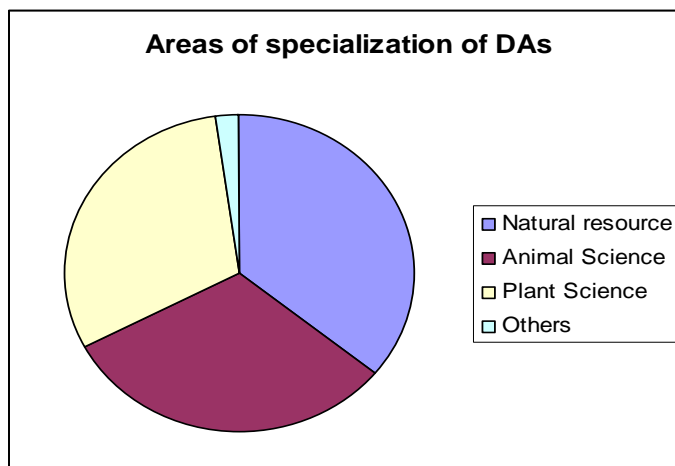


Figure 1: Composition of DAs in terms of specialization areas

Despite their large number and training in key technical areas, the majority of the DAs (62%) felt that they were not adequately trained to effectively discharge their responsibilities and adapt to changing challenges and conditions. The ATVET's curriculum for training DAs covers technical aspects of general agriculture and specialization courses and a course on extension and communication methods. In

addition, DAs need additional knowledge and new skills to effectively serve producers as they move to more market-oriented and high value products and value addition. In particular, DAs felt, though didn't articulate well, that they needed additional skills to facilitate participatory process, producers' linkages (to sources of knowledge, service, finance and market) and collective action- in input and output markets, natural resource management, gender and community empowerment. Further, skills in communication and effective use of media and knowledge management tools are crucial for DAs to be effective.

Cognizant of existing knowledge and skills gaps for participatory market-oriented commodity development, the project conducted in-service trainings for DAs or training of trainers for experts in the system. The training addressed key topics, such as participatory and market-oriented extension methods, gender and HIV/AIDS, technical skills related to specific commodities and computer use. Technical trainings were often provided by experts in collaboration with WoA (Woreda office of Agriculture). For training of DAs and experts in specialized skill areas (such as fruit seedlings grafting technique), resource persons were mobilized from research, university, ATVETs, NGOs, the private sector and specialized association (e.g. East Shewa Beekeepers Association).

Trained DAs might not stay in the same kebeles. They often move to other Kebeles or promoted to higher positions after getting some experience and additional skills. This observation points to the need for continuous capacity strengthening through in-service training and on-the-job coaching as well as giving attention to cultivating the DAs' aptitude for life long learning.

Table 2: Profile of development agents (DAs)

	Percentage	Number of respondents
Proportion of female DAs	11.7	447
Average number of DAs per FTC	2.81	447
Proportion of DAs who felt they were	27.4	435

adequately trained to effectively discharge responsibility		
DAs who ever attended computer training	48.6	418
DAs with secondary residence	67.1	362

It is also interesting to note that development agents' total service year (Figure 2b) and duration of service at the FTCs at the time of the survey (Figure 2a) seem to be negatively correlated. This might be due to high staff turnover at FTC level, and indicates also that newly trained and inexperienced DAs account for larger proportion of the field staff.

DAs need sufficient time to acclimatize themselves with the local situations, constraints and potentials, and to build trust with clients. Only then, can the DAs make meaningful contributions to increasing productivity, income, and improving rural livelihoods.

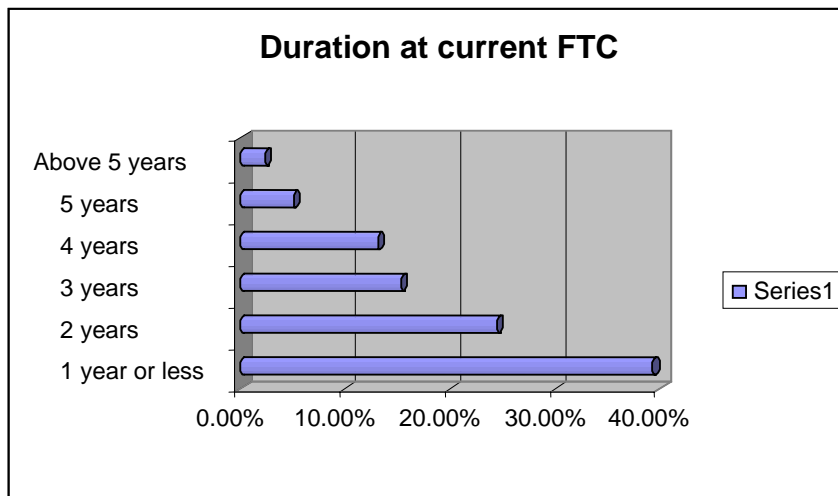


Figure 2a: Service year of the DAs at current FTC

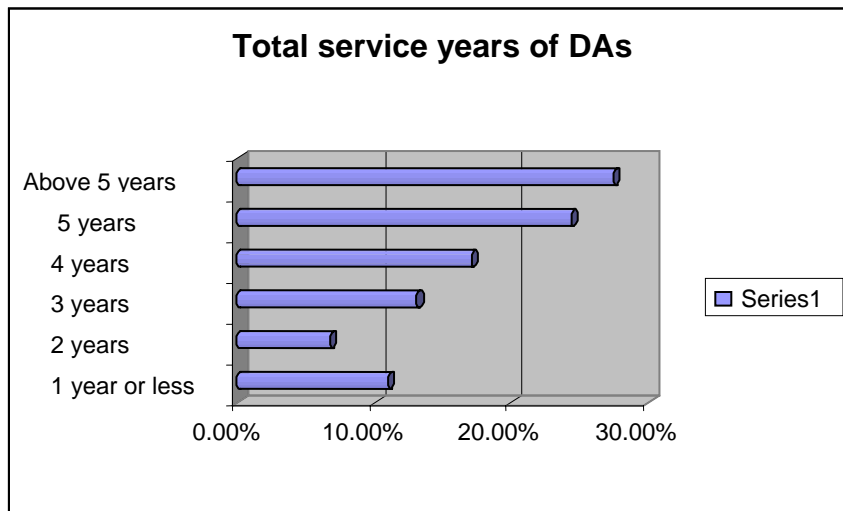


Figure 2b: Total service year of the DAs

3.2 Physical resource capacity at the FTCs

As stipulated by the guidelines for FTCs (MoARD, 2009), the basic physical infrastructure that an FTC required to fulfill to be functional encompasses buildings – classrooms, living quarters for DAs, a common office, workshop and a permanent exhibition centre. Demonstration plot, animal shelter, irrigation and/or water harvesting infrastructure are the other crucial infrastructure and facilities stipulated by the MoA to make FTCs functional.

Most of the FTCs were built by the government with substantial contributions from kebele communities (Figure 3). Government covered materials and skilled labor costs for construction. The communities contributed their own labour as well as locally available materials and inputs. In some of the PLWs, such as Bure, communities (kebeles) covered the entire costs for the construction of classrooms (8), office (11) and workshop/store (9).

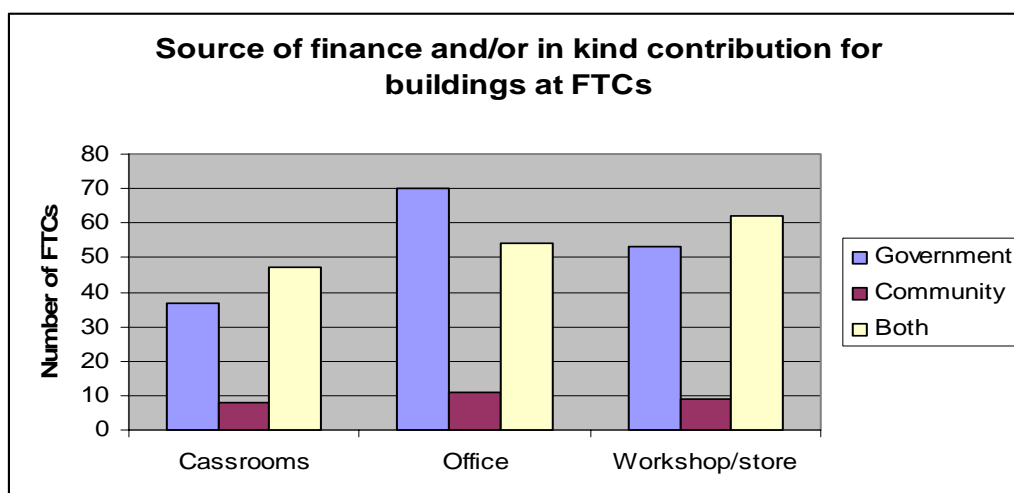


Figure 3: Finance and in kind contribution to buildings

Very few FTCs were built prior to 2003 (Figure 4), particularly in Alaba PLW. The majority of the FTCs are relatively new. Classrooms, offices and workshops were added during 2003 to 2006. On the other hand, when we look at the year most FTCs

acquired chairs and tables, it extends from 2005 to 2010. This shows that in many of the rural kebeles, the process of establishing and organizing functional FTCs is not yet complete.

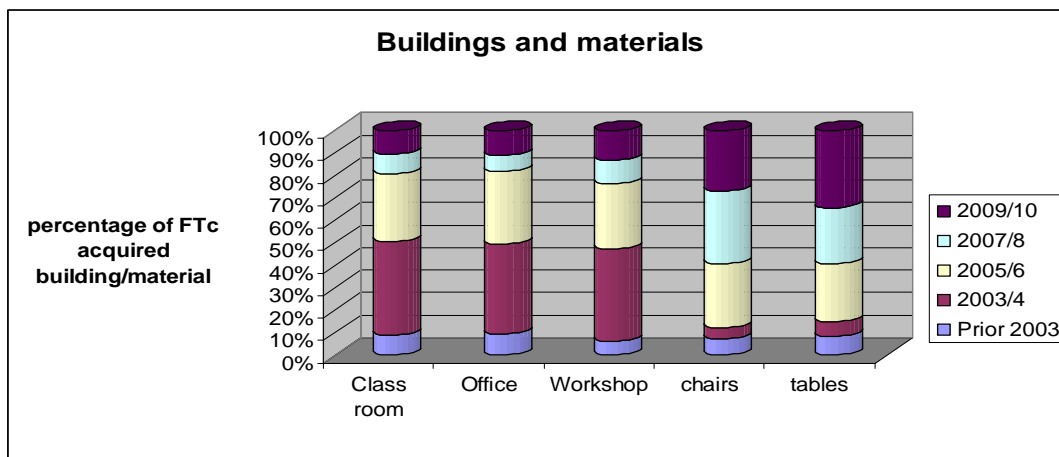


Figure 4: Years in which the FTCs acquired buildings, chairs and tables

Many FTCs do not have adequate and appropriate living quarters for DAs. Two-third of the DAs reported that they had secondary residences at the time of the survey (Table 2). Improving living quarters for DAs is important as an incentive to encourage the agents to live in and spend most of their time with the community; sharing knowledge, learning local practices, and helping to solve problems.

Projects such as IPMS, RCB (Rural Capacity Building project) and NGOs have made important contributions in equipping FTCs with basic materials such as chairs, tables and shelves (Figure 5). Contributions were also made by communities in limited number of kebeles.

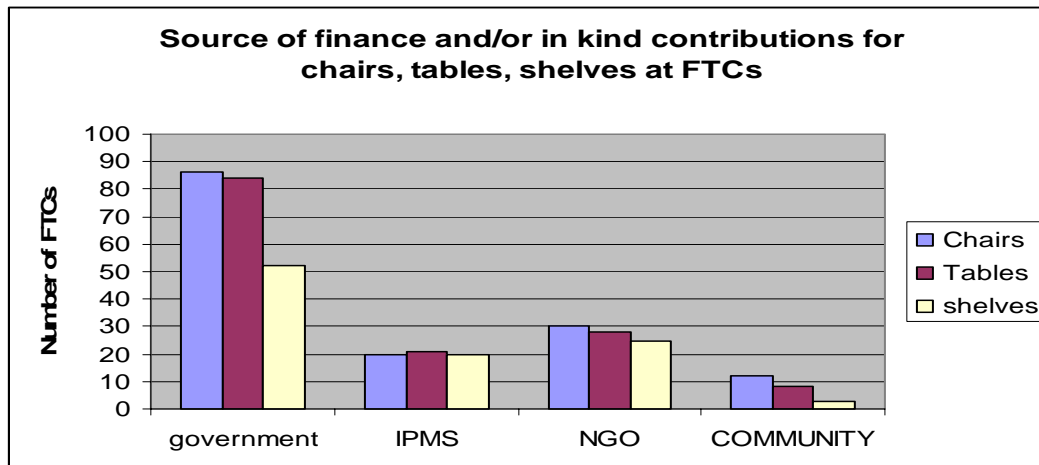


Figure 5: Sources of support for chairs, tables and shelves

There are still a number of FTCs yet to acquire basic equipment and materials, as can be seen from the last column of Table 3. IPMS supported FTCs are in a better condition than the other FTCs, in terms of irrigation infrastructure, access to means of transport and services such as electricity and telecommunication. Almost all FTCs (97%) lack structure for keeping animals for dairying and fattening (Table 2). None of the FTCs reported fish pond, poultry house, and any other space for keeping beehives, processing of honey or other products. As a matter of program, IPMS didn't encourage keeping improved animals at FTCs. This is mainly due to the fact that keeping livestock would require continuous follow up, which is challenging given facilities and human resource availability at most FTCs.

Table 3: Physical resource, power, and means of transport at FTCs

Infrastructure and facilities	IPMS FTCs (35)		Other FTCs (123)		Overall (158 FTCs)	
	Yes	Percentage	Yes	percentage	Yes	Percentage
Chairs	35	100	99	80.5	134	84.8
Tables	35	100	95	77.2	130	82.3
Shelves	34	97.1	63	51.2	97	61.4
Workshop	30	85.7	99	80.5	129	81.6
Animal shelter	2	5.7	2	1.6	4	2.5
Irrigation	14	40	16	13	30	19
Power	32	91.4	9	7.3	41	25.9
Transport	14	40	26	21.1	40	25.3

FTCs are also expected to be demonstration sites for improved technologies and equipment and to establish permanent exhibition centers for the display of improved technologies, models or samples. Nonetheless, not one FTC reported separate space for displays. Less than 8% of the FTCs kept animals during the time of the survey (Figure 6). IPMS FTCs were in a better position though the project didn't encourage FTCs to keep improved animals. Yet, the quality of animal management at the FTCs was not up to the expected standard due to the lack of appropriate structure and inadequate attention. Proper management of animals requires 7 days/24 hours attention.

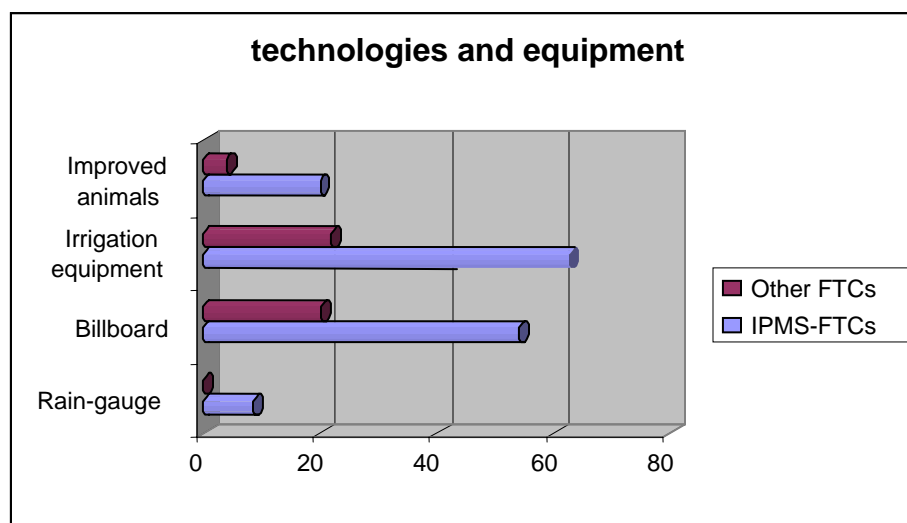


Figure 6: Improved technologies and equipment availability at FTCs

Regarding utilization, the FTCs and facilities have multiple users and multiple uses. Besides DAs, the rooms and facilities were used by human health extension, farmer or interest groups, local administration, NGO and local research centers (Figure 7a). In addition to learning and teaching activities, the rooms and facilities were used for public meeting as well as for entertainment (Figure 7b). The FTCs, particularly those supported by IPMS, seem to be gradually becoming more than training centers, rather serving increasingly as multipurpose community centers.

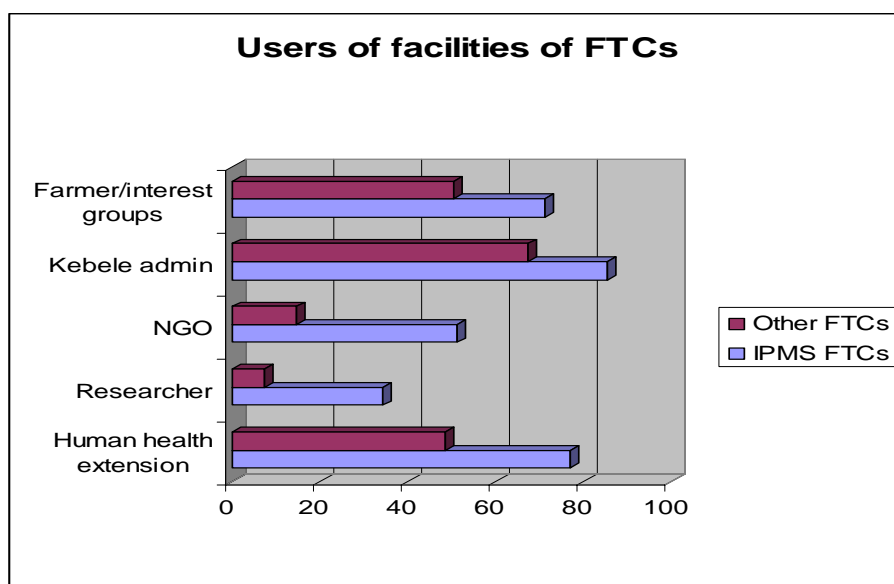


Figure 7a: Users of rooms and facilities of FTCs

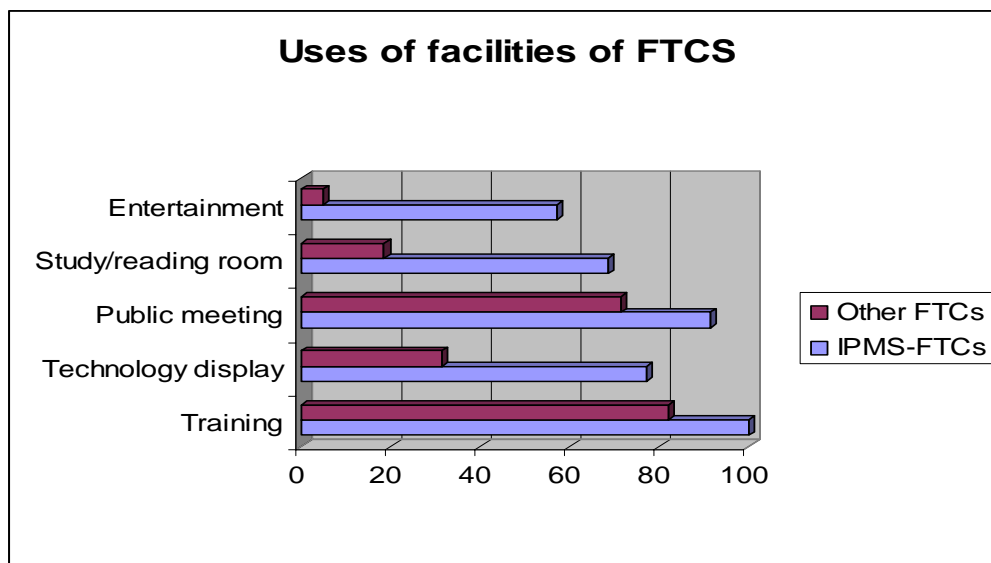


Figure 7b: Uses of rooms and facilities of FTCs

3.3 Demonstration facilities and uses at the FTCs

Project baseline studies revealed that though farmers were able to receive information on production technologies, adoption rate was low due to difficulties to translate such information into actionable or practical knowledge. The existence of basic facilities at FTCs is important for practical training and demonstration of improved technologies and practices in production, post harvest handling, processing and entrepreneurship. Demonstration farms are also important to conduct some adaptive research and farmer participatory evaluation prior to launching large scale promotion of technologies and practices. It is indeed through demonstration and adaptation process that DAs and farmers can translate research recommendations into useful and practically applicable knowledge.

The survey result shows that 81% of the FTCs had some plots for demonstration with average size of 1.36 ha. About 21%, 19% and 22% of these FTCs had, plot area of less than 0.5ha, 0.50 - 0.99 ha, and 1.00 - 2.00 ha, respectively. Of these FTCs, 69% reported that the allocated plots were suitable. In other words, 19% of the surveyed FTCs didn't have any plot and a third of the FTCs found the allocated plots unsuitable. Some kebeles allocated plots in swampy areas, areas with flood problems or small and marginal land unsuitable for demonstration purposes.

In addition, as shown previously in Table 3, only 19% of FTCs (40% of IPMS FTCs and 13% of other FTCs) had irrigation water and/or water harvesting structure; and few FTCs had animal sheds/barns and kept improved animals for demonstration. In such FTCs conducting demonstrations and practical training in topics such as irrigated high value crop production, fishery, meat and dairy becomes difficult and other demonstrations are limited to the rainy season. Such demonstrations should be carried out in nearby farmers' fields. Similarly, demonstrations on natural resource management can be done in nearby fields and communal resource areas.

Table 4: Summary figures on demonstration plot availability, suitability, and size

Demonstration plot	IPMS FTCs (35)		Other FTCs (123)		Overall (158 FTCs)	
	Yes	Percentage	Yes	percentage	Yes	Percentage
Plot available	33	94.3	96	77.4	129	81.1
Plot suitable	22	66.7	67	69.8	89	69
Mean size	1.3 ha		1.5 ha		1.36 ha	

In addition to the availability of facilities, finance is needed for demonstration activities for expenses such as costs of improved inputs/technologies, equipment, labor, animal feed, etc. In their initial stage, FTCs need funding from government, cash or in kind support from communities and other organizations. Nonetheless, FTCs should develop capacity to generate income to cover some operational costs through innovative use of demonstration farms and other facilities at their disposal. In most of the cases, government, projects or NGOs covered the costs of purchased inputs and the communities contributed their labor. However, there were few cases where FTCs tried to generate income from demonstration farms (Figure 8) and solicited financial support from the private sector (in Ada'a) for demonstration and/or field days.

With regard to use (Figure 8), demonstration plots were primarily used for practical training and demonstration of improved technologies and practices at the FTCs. Some FTCs used their plots for multiplication of improved seeds and forage planting material (seeds/cuttings). Besides, the plots were used for conducting some adaptive trials, often in collaboration with IPMS and/or local research centers.

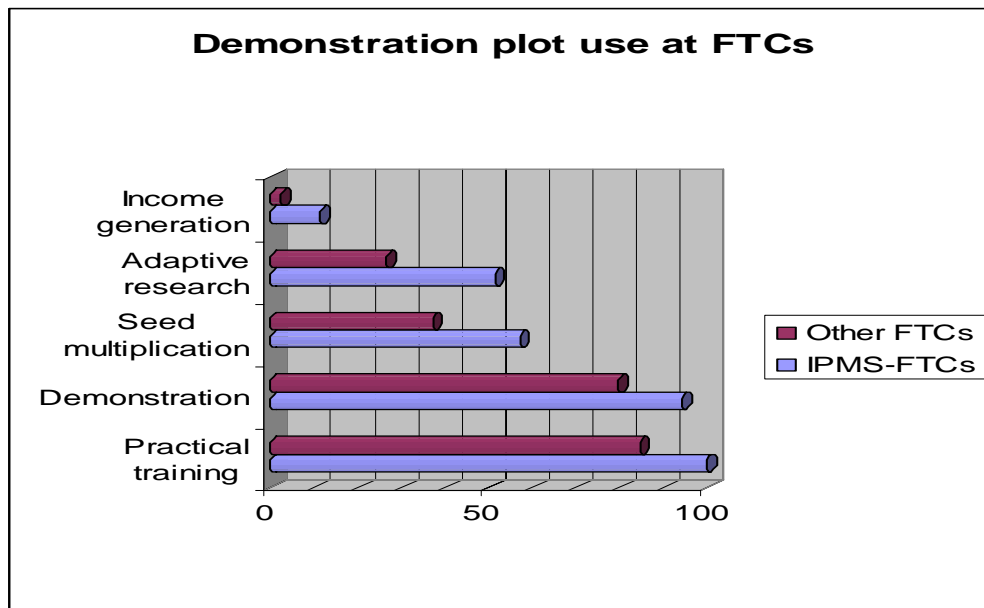


Figure 8: utilization of demonstration plots at FTCs

According to a recent progress report (October 2010- March 2011), most of the IPMS FTCs were engaged in multiplication of improved crop seeds (cereals and pulses) and forage planting materials. Following are some examples for illustration:

- Gane FTC in Dale had multiplied Napier (elephant grass), Desho, Phalaris and Guatemala grasses and supplied to 173 framers from 12 kebeles who were trained on livestock feed production by VOCA- Ethiopia's Feed Enhancement Project.
- Chume FTC in Dale signed a contract with VOCA- Ethiopia to supply Napier cuttings with a value of Birr 7000.
- With the help of IPMS, 19 FTCs in Bure (including 4 IPMS FTCs) conducted demonstrations on improved forages, cereals, fruits, water harvesting and zero or conservation tillage practice.
- IPMS FTCs in Ada'a conducted demonstrations on improved vegetable varieties with irrigation and engaged in demonstration of improved varieties of teff and pulses as well as multiplication of seeds and forage planting materials.

3.4 Availability and uses of training materials and ICT tools

With increasing shift toward decentralized, participatory and market-driven extension systems and increasing accountability for impact, effective communication and knowledge management will become critical in delivery of extension services. To this effect, agricultural extension needs innovative approaches and tools, including effective use of conventional media and gradual adoption and assimilation of advanced ICTs. With increasing commercialization, integration and effective application of ICTs in extension will become essential to facilitate linkages, interactions and coordination. These include linkages and interactions among producers, value chain actors, and other stakeholders within and beyond the agricultural sector in knowledge sharing and supportive services.

Further, the availability and use of appropriate mix of media at FTCs is important for effective training, extension and advisory services. This sub-section presents and discusses the survey results on availability and uses of training materials, audio-visual and other ICTs.

3.4.1 Printed media availability and use

Relevant and up to date printed materials are important for dissemination and sharing of knowledge and information as well as for training as aids. Table 5 displays a summary of survey data. Manuals were the most commonly available printed materials. Posters on various general and specific issues were the second widely available materials. Very few FTCs had periodicals on policy and crosscutting issues relevant to market-oriented agricultural development. Reference materials for DAs such as IPMS working papers, research reports and books were in short supply, particularly at FTCs not supported directly by IPMS. Though not widely available at the FTCs at the time of the survey, some training materials were developed and distributed for use by the extension system. These include training materials on participatory market-oriented extension (adapted and translated to

Amharic and Afaan Oromo), gender and HIV/AIDS analysis tool kits and guidelines for improved beekeeping, onion seeds production, etc.

Table 5: Summary figures on printed media availability at FTCs

Printed media	IPMS FTCs (35)		Other FTCs(123)	
	Percentage owning	Average quantity	Percentage owning	Average quantity
Manuals	94.3	7.80	82.1	4.30
Posters	77.1	2.50	56.9	1.84
Books	48.6	3.11	18.7	1.36
Working papers	14.3		8.1	
Research reports	11.4		0	
Periodicals	14.3		1	

Regional bureaus are the primary source of technical and production technology-oriented manuals. Development agents used manuals and posters for extension and as training aids. Manuals were also used by DAs for self-learning and as references while preparing content for farmer trainings (Figure 9).

Moreover, relatively educated and progressive (model) farmers used manuals for reference (reported by 36 FTCs), self-learning (28 FTCs) and for information and knowledge sharing with fellow farmers (23 FTCs). Likewise, posters were used by progressive farmers for self-learning (76 FTCs), much more than manuals, and for knowledge and information sharing (19 FTCs) with fellow farmers. Regardless of the high level of rural illiteracy, the result shows the potential of printed media as independent information and knowledge source and as additional tool for facilitating farmer-to-farmer information and knowledge sharing. In particular, posters if prepared properly, can be effective information sources for literate and illiterate farmers.

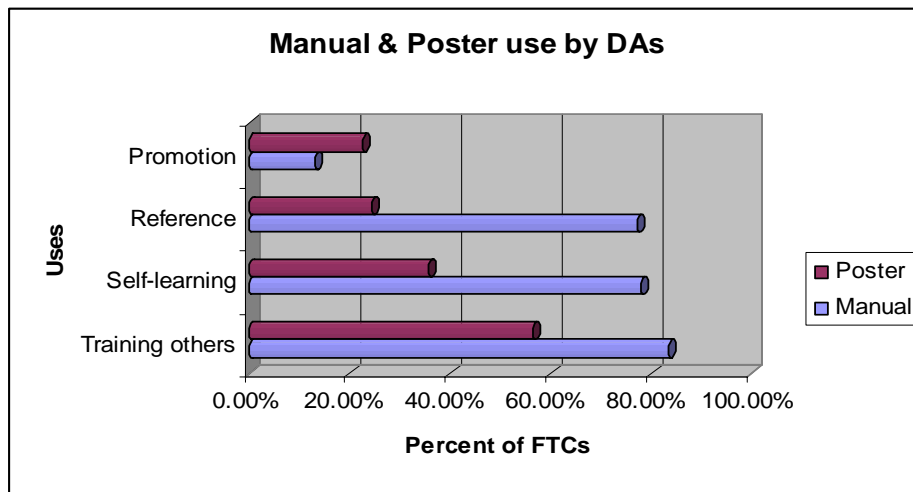


Figure 9: Manual and poster use at FTCs by DAs

3.4.2 Availability and use of audio-visual equipment, telephone, computers, and the internet

Almost all IPMS FTCs have audio-visual and other ICT equipment such as TV sets and DVD players, telephone lines, personal computers and printers (Table 6). In addition, most of the IPMS FTCs were already connected to the Internet at the time of the survey and the remaining ones were connected after the survey. However, neither IPMS FTCs nor other FTCs reported the possession of cameras, which could be a useful and cost-effective tool for capturing and sharing knowledge and information. This part of the report deals only with IPMS FTCs as the other FTCs were not supported by IPMS and didn't have most of the audio-visual and ICT equipment (Table 6).

Table 6: FTCs with telephone, computers and audiovisual equipment

ICT equipment	IPMS FTCs (35)	Other FTCs (124)	Overall
Telephone lines	27 (77.1%)	5 (4.1%)	32 (20.3%)
Computers	35 (100%)	1 (0.8%)	36 (22.6%)
Printers	32 (91.4%)	1(0.8%)	33(20.8%)
TVs	35 (100%)	2 (1.6%)	37(23.3%)
DVD players	35 (100%)	2(1.6%)	37(23.3%)

Satellite dish & decoder	8 (22.9%)	0	8(5.03%)
Camera	0	0	0

Availability of telephone lines at convenient community centers can facilitate communication and, access to and sharing of information. About a quarter of IPMS FTCs didn't have access to telephone at the time of the survey but got wireless or CDMA based access later on. Apparently, voice service was the most important use of telephone at IPMS FTCs. As can be seen from Figure 10, the three most important purposes for which the telephone lines were used, in order of importance, were reporting emergencies or outbreak of diseases, arranging input and service delivery and communicating with supervisors, experts and woreda offices. In addition, telephone was used for organizing meetings and, to some extent, for market information inquiry and sharing, particularly with farmers who had mobile phones.

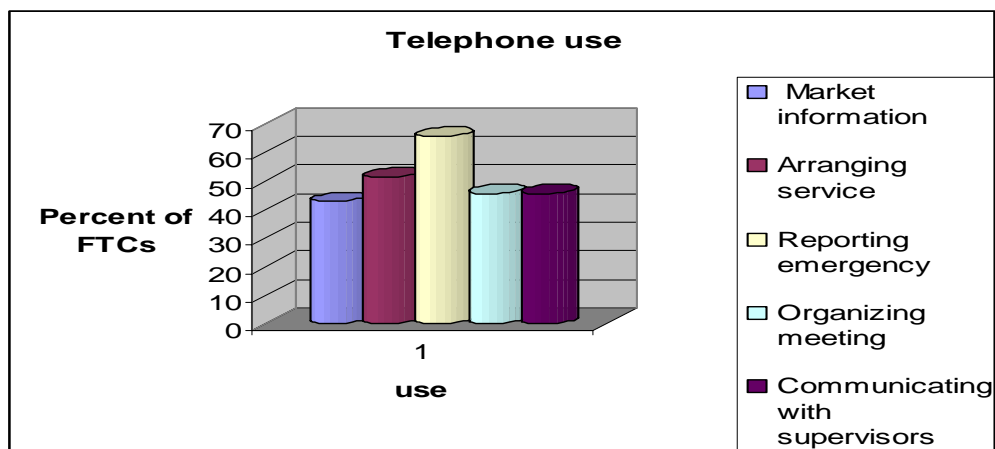


Figure 10: Telephone use at IPMS FTCs

The use of TV, radio and video in agricultural extension is not new though access was not easy. However, this has been improving dramatically due to continuous technological advances and rapidly falling prices for acquiring and using them. Mass media can be used as both independent source of knowledge and information and tools for facilitating communication and knowledge sharing.

All IPMS FTCs had TV sets and DVD players and received recorded videos in VCD's/DVD's from IPMS and other sources. The project produced some of the videos and got others from partner organizations. FTCs were encouraged to use videos when and where relevant to the priority commodities and crosscutting issues. As summarized in Figure 11, audio-visual products, such as the most popular video on fruit grafting techniques, were used by IPMS FTCs for instruction/farmer training and self-learning by DAs. TVs and videos were also used for entertainment both by DAs and rural communities.

According to the FTC guidelines, DAs are expected to collect and document basic agricultural and socio-economic information of their respective kebel and to capture and document indigenous knowledge and successful practices of farmers and communities. Access to computers by DAs makes such documentation and information management efficient. Once captured on computers, such information can also be organized and disseminated in different forms for use by local producers, entrepreneurs, school, etc. Further, access to computers will become important with increasing role of agricultural extension for knowledge and information services.

IPMS FTCs used computers primarily for self-learning, including computer skill development and for reading documents provided on CD's as well as for accessing CD-Rom based off-line copies of the Ethiopian Agriculture Portal (<http://www.eap.gov.et>). Many FTCs had Internet connection through dial-up. The recently introduced CDMA technology has enhanced the connectivity of IPMS FTCs. This is expected to further encourage wider use of the Internet beyond e-mail, for general browsing and searching specific information relevant to local contexts, needs and challenges. Moreover, the internet can be used to link FTCs/DAs to the best sources of expertise and centers of excellence, such as horticultural research group at Melkassa Agricultural Research Center, for specialized knowledge and/or improved inputs/technologies.

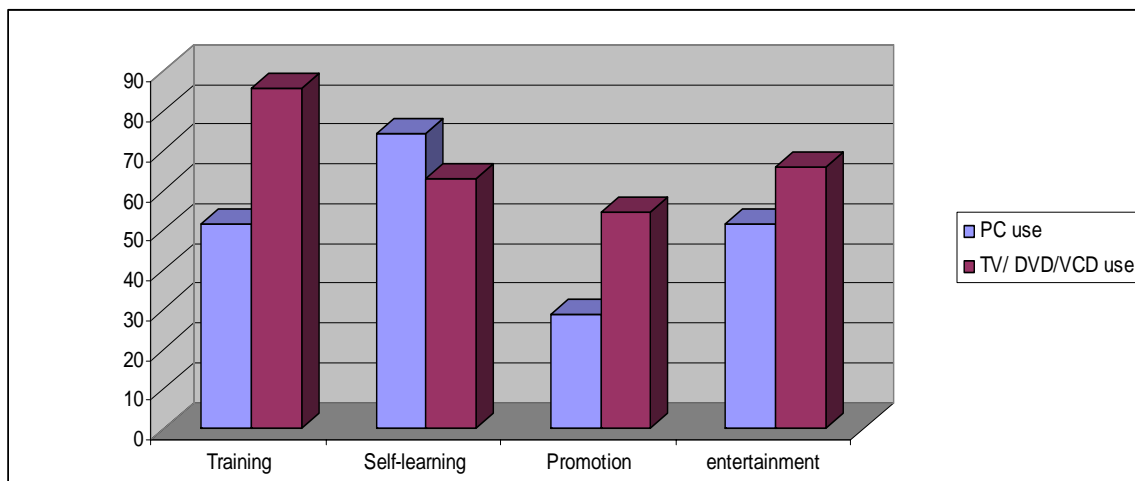


Figure 11: PC and audiovisual uses at IPMS FTCs

On the other hand, electrical power supply is a necessity to make use of the audio-visual and IT equipment. At the time of the survey, 91.4% of IPMS FTCs had power supply against 7.3% for other FTCs. IPMS helped the model FTCs to acquire power either through facilitating connection to the national grid or through the supply of small mobile generators.

Operating ICTs at FTCs involves costs for maintenance and operations. Such costs include supplies, telephone and power utility costs. These costs, for IPMS FTCs, have been covered mainly by the project. Contribution by rural communities or income from internal revenue of FTCs was insignificant. Similarly, the cost of learning events such as field days, experience sharing visits and exhibition were often covered by projects and NGOs. Besides, the contribution of WoA to cover costs associated with knowledge sharing and learning events was significant though sporadic.

3.5 Trainings and knowledge sharing activities at the FTCs

Next to the regular extension service often delivered through farm visits, FTCs are expected to conduct modular green certificate training (six months) and certificate training (3 months) for farmers and rural youths. According to the guidelines of MoA, the objective of FTC-based modular trainings is to impart knowledge and develop skills of farmers in technical production and natural resource management as well as post-harvest, processing and marketing/entrepreneurship.

The survey data shows that the percentage of FTCs that conducted at least one green certificate training during the 12 months prior to the survey is higher at IPMS FTCs (Figure 11). In particular, about 77% of IPMS FTCs conducted at least one non-certificate short-term trainings against 37% of the other FTCs in the same period. With respect to frequency, about 41%, 22% and 7% of IPMS FTCs conducted, two, three and four short trainings respectively, whereas about 35% and 4% of the other FTCs conducted two and three short trainings respectively, during the same period.

More than 80% of IPMS FTCs used videos for instruction (Figure 11) and supplemented farmer trainings with practical demonstrations. The guidelines for FTCs-based training underline adherence by FTCs to the principles of adult and experiential learning and integration of audio-visuals, demonstrations and hand-on practical exercises.

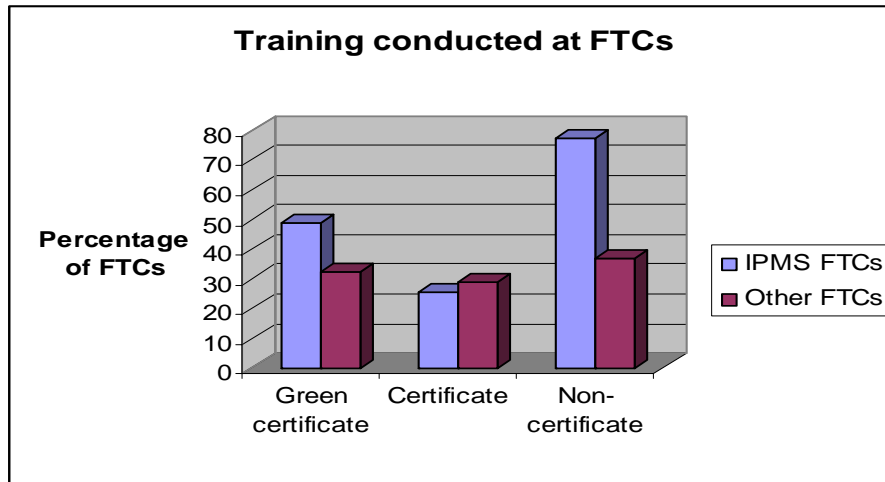


Figure 11: Different types of training conducted at FTCs

Finally, IPMS FTCs carried out, often with project staff facilitation, focused, problem-based short training, demonstration activities and knowledge sharing events related to priority commodities. In Atsbi, for instance, knowledge sharing workshop among beekeepers, bee technicians and experts revealed a knowledge gap. Subsequently bee colony splitting, transfer and foundation sheet preparation training was conducted, by facilitators from Wukro ATVET. Such need-based and focused short training with subsequent follow up, arrangements for input and supportive services, and market linkage facilitation ensured the application and dissemination of knowledge among target producers.

4 Summary and Conclusion

The major objective of the assessment was to identify good practices and draw out some lessons that could inform similar future initiatives for strengthening and enhancing the role of FTCs for market-oriented agricultural development. On the basis of IPMS experience and results of the assessment discussed earlier, this section outlines the same and winds up with some concluding remarks.

4.1 Good practices in enhancing the role of FTCs

The good practices in enhancing the role of FTCs as demonstrated by experience of the project and supported with the assessment are as outline below:

- Improving access of FTCs to basic infrastructure (electricity, telephone, Internet) makes the centers much more likely to register good results in attracting and assisting farmers than those with no or very limited access.
- Strengthening FTCs in materials and equipment facilitates gradual transformation of FTCs into multi-purpose community centers, serving producer/interest groups and other rural actors in various capacities.
- Strengthening demonstrations at FTCs through financial, material and technical support improves practical training, facilitates demonstration and adaptation of technologies and practices, enhances the role of FTCs in the multiplication of improved seeds, and contributes to financial viability and sustainability.
- Maintaining live animals at FTCs is not recommended since such demonstration requires better infrastructure and good management of animals, which needs 24 hours/7 days attention.
- Improving the availability of training materials (textual and videos) together with audio-visual equipment and computers creates an enabling environment for DAs for continuous self-learning, improves classroom instruction, and

facilitates independent learning by progressive farmers and knowledge sharing with fellow/contact farmers.

- Need-based, focused and short training on priority commodities, follow up, and input, service and market linkage facilitation enhances the use of acquired knowledge as well as knowledge sharing among target farmers.
- Increasing access to knowledge for DAs through telephone, Internet, offline copies of EAP, supply of materials, market information, and using the center for various knowledge sharing activities enhances the role of FTCs as agricultural knowledge centers.
- Clear implementation plan, capacity strengthening and systematic monitoring mechanisms are important to introduce ICTs and ensure effective and sustainable use of the tools in the delivery of agricultural extension services.
- Capacity development in terms of human, resources and linkages facilitation to enhance the role and responsiveness of FTCs to market-oriented development is a continuous process, requiring Woreda and higher level leadership that believe in the relevance and committed to support FTCs.

4.2 Concluding remarks

The assessment shows the process of establishing and organizing functional and effective FTCs has not yet completed in many rural kebeles. Several FTCs lack adequate basic infrastructure, demonstration facilities and plots, funding, skills, appropriate approaches and tools, and linkages for accessing knowledge and information.

Hence, IPMS support to selected FTCs for capacity strengthening has made a difference in enhancing the role of the centers. The support improved responsiveness and effectiveness of training, demonstration, and other information/knowledge sharing activities of the model FTCs. In particular, need-based, focused and practical short trainings were more common at IPMS FTCs than at other FTCs. Most of IPMS FTCs were engaged in demonstration, participatory technology evaluation, and multiplication of improved seeds, including for revenue generation. Also, IPMS FTCs had relatively better linkages and interactions with research, agricultural education and training (AET), and value chain actors.

IPMS has been successful in introducing and testing the possibility of deploying ICTs to strengthen public agricultural extension. The media and ICT tools are being used by DAs for both self-improvement and performing functions such as training and accessing and sharing knowledge and information. In Ethiopia, use of ICTs for agriculture and rural development holds great promise for the future, once the countries basic IT infrastructure is adequately developed.

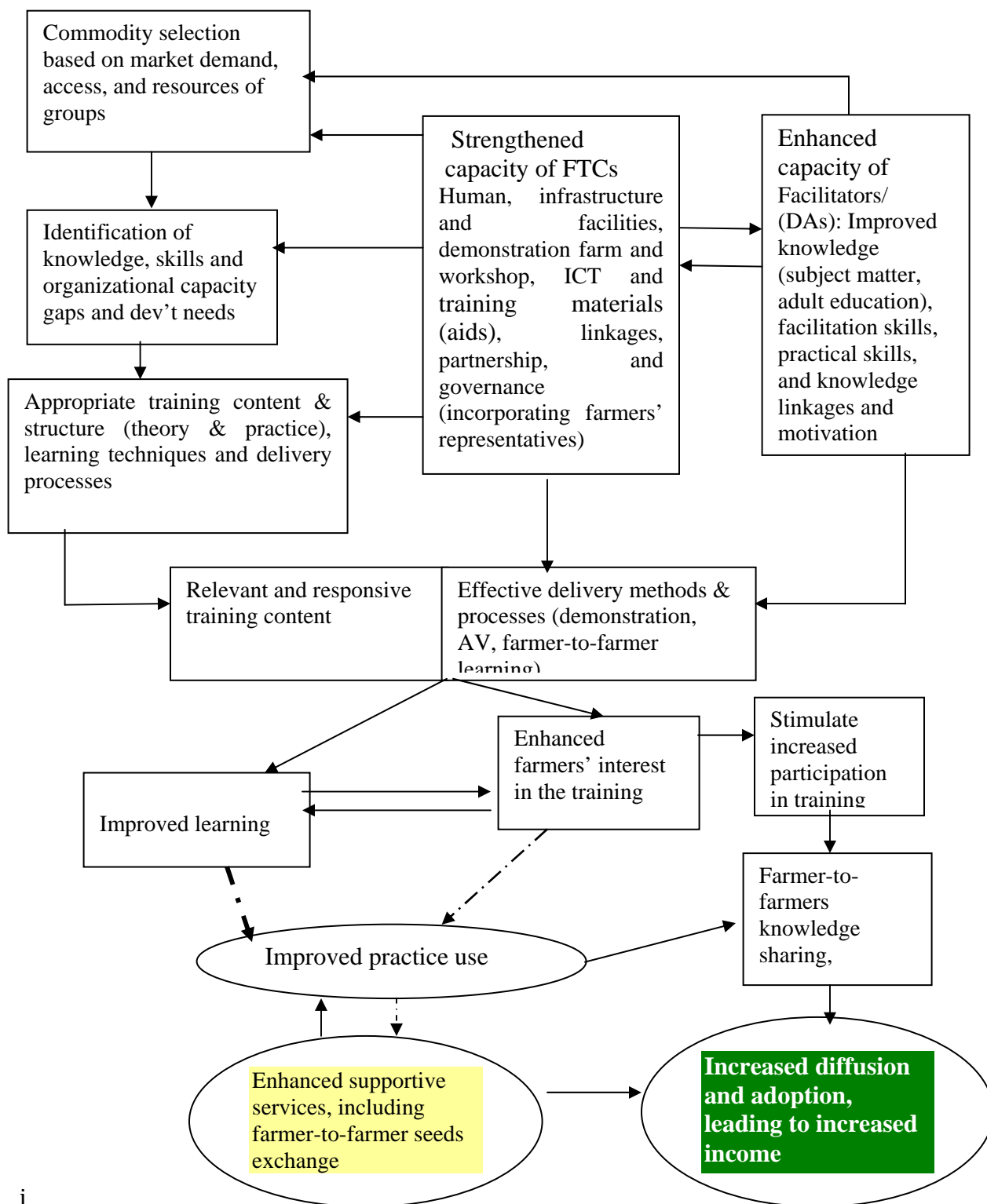
More attention needs to be given to capacity development, systematization and diversification of the application of audio-visual and IT tools. Further capacity strengthening is crucial to ensure the approach is responsive to specific local needs, is utilized effectively, and can be sustained after project funding ceases. In addition to computer application training, field extension cadre need capacity in

communication and audiovisual skills as well as in effective application of ICT tools to improve responsiveness and effectiveness of extension services and enhance service impact on performance of producers.

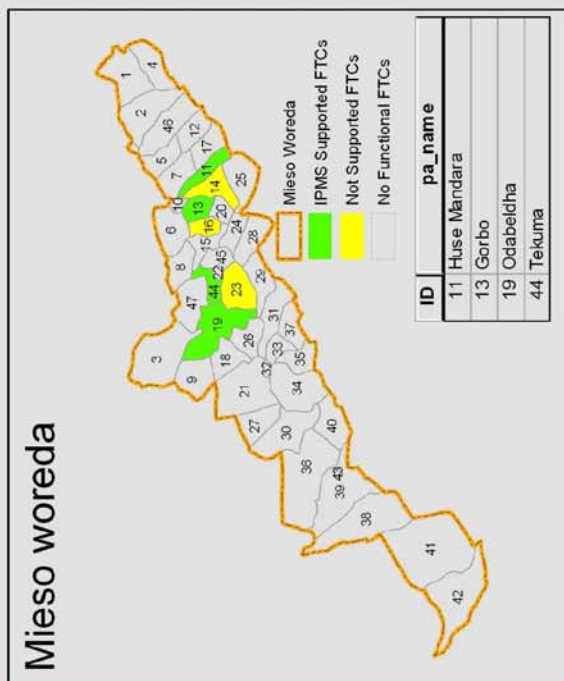
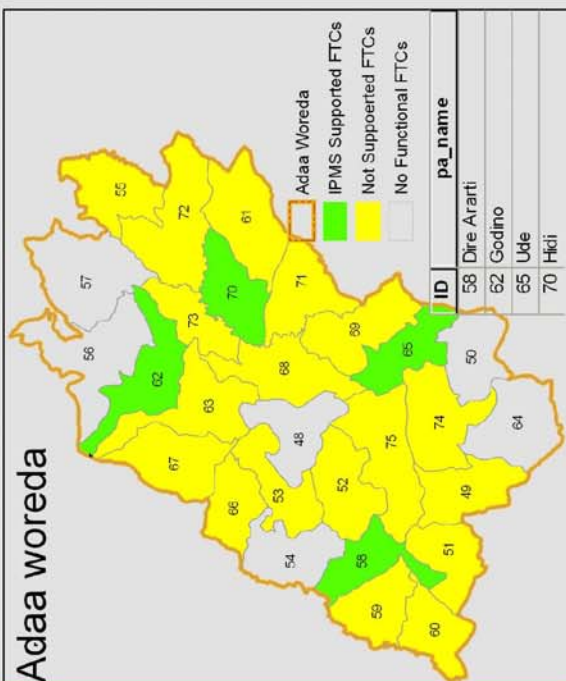
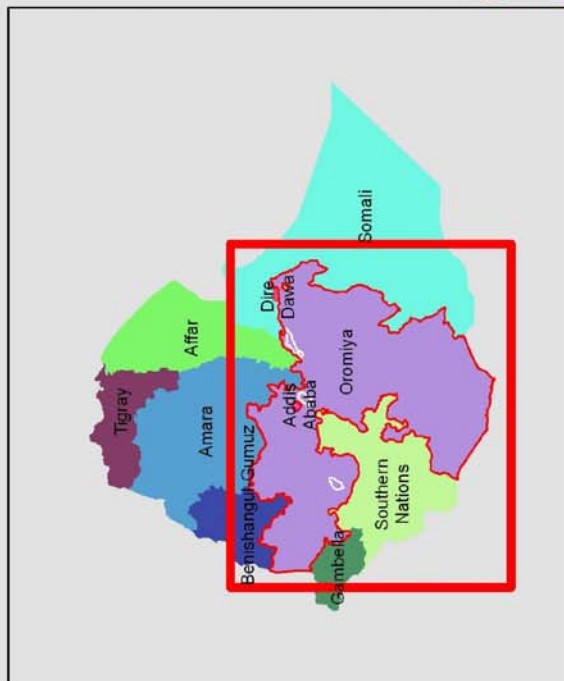
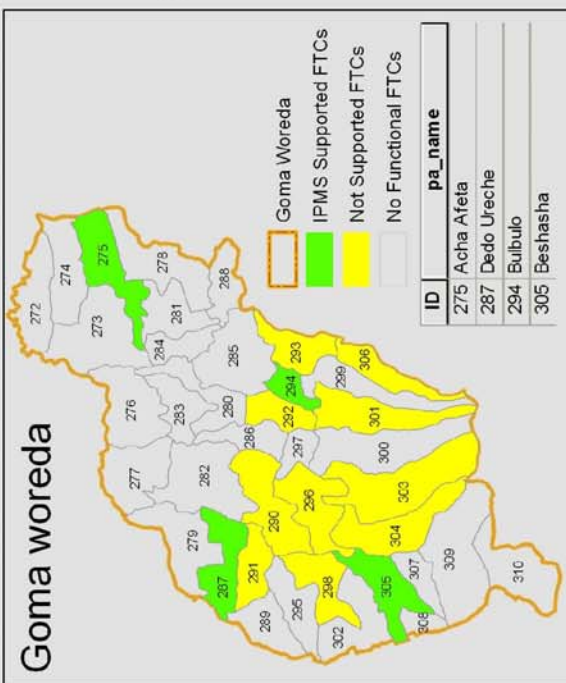
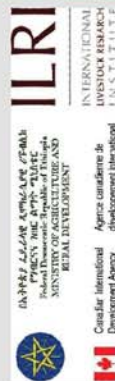
Putting in place clear and shared implementation plan and mechanisms for systematic monitoring are important, to widely introduce and ensure effective and sustainable use of ICTs to enhance the delivery of agricultural extension services in Ethiopia.

Process and impact monitoring is important for adaptation and to ascertain whether the new approach in integrating ICT tools are more effective, and thus need to be up scaled. With respect to the later, the scope of the survey and the generated evidence for the current assessment was such that outcome and impact indicators are not available. As the saying goes, *'what you measure is what you get.'*

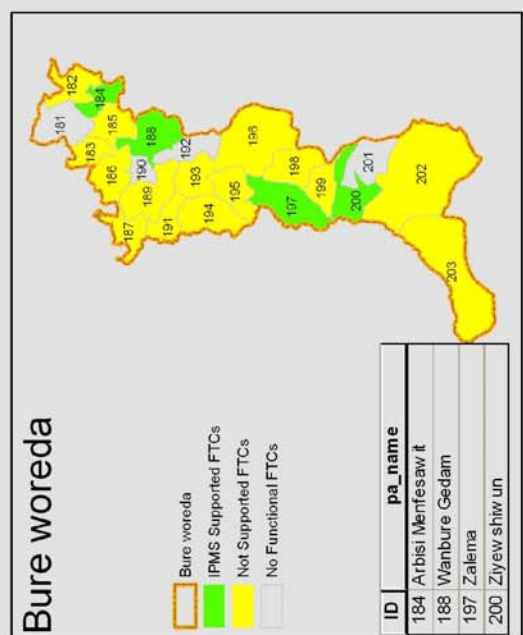
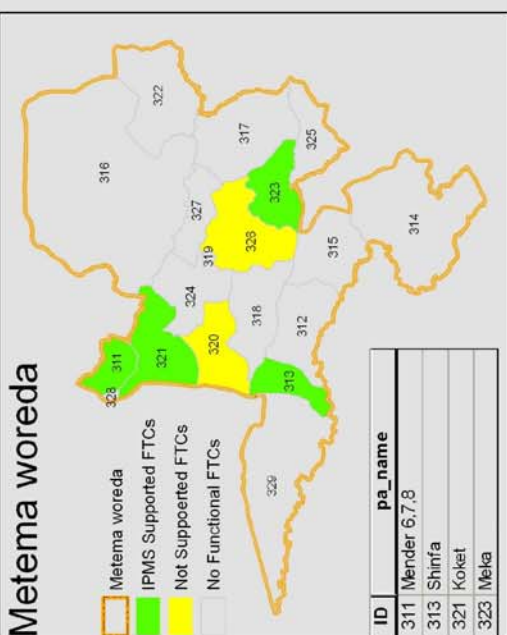
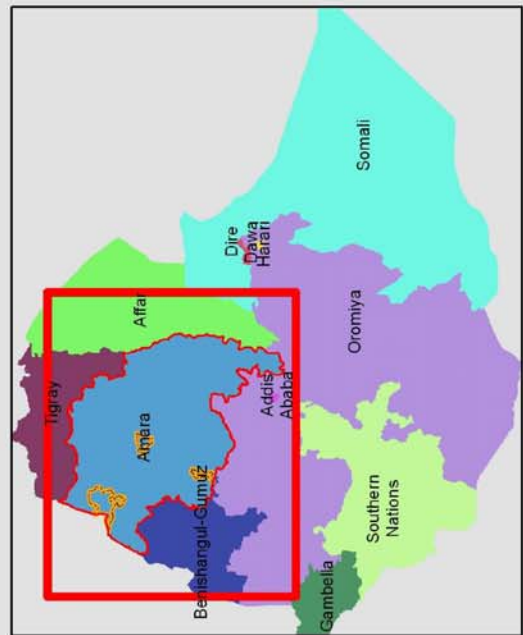
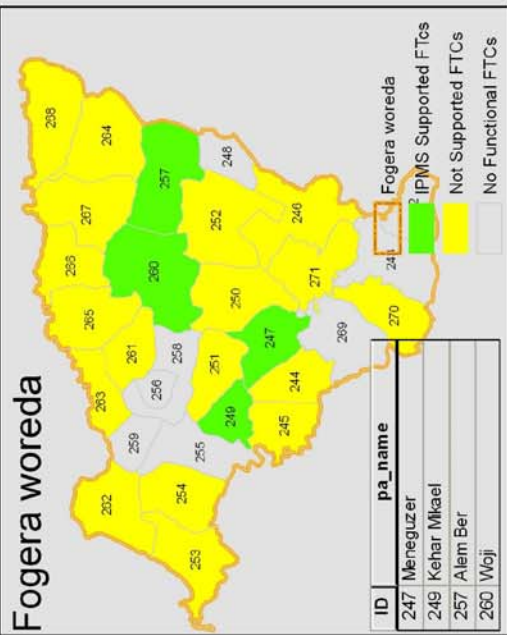
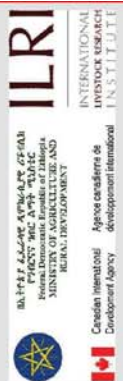
Annex -1: Conceptual map for responsive and effective FTC-based farmer training to increase income from market-oriented commodity value chains development



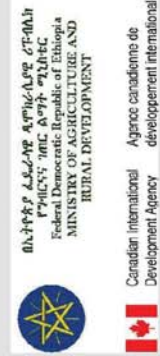
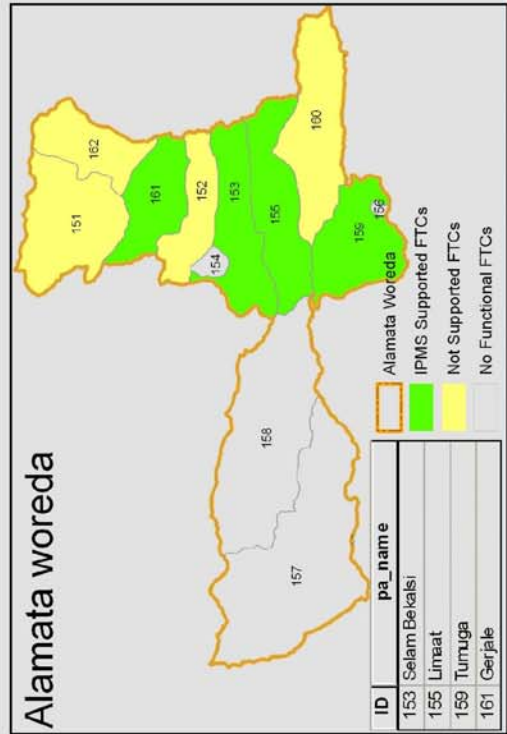
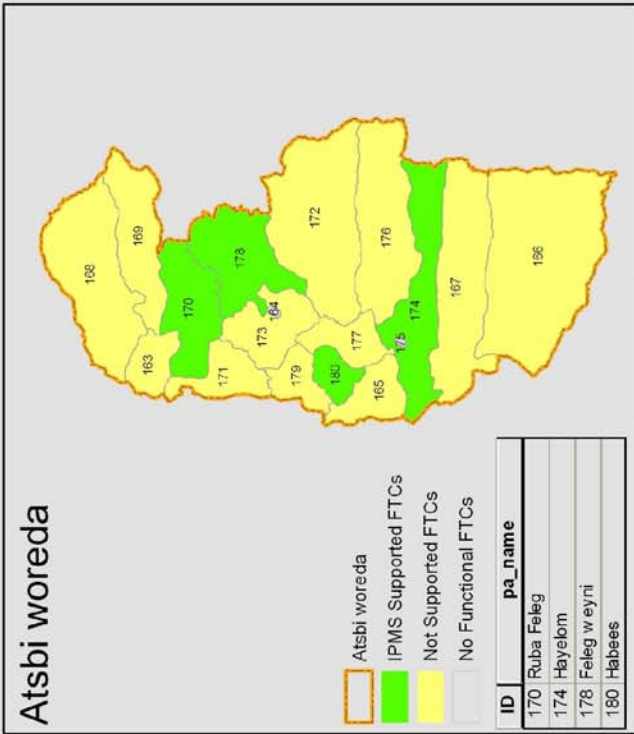
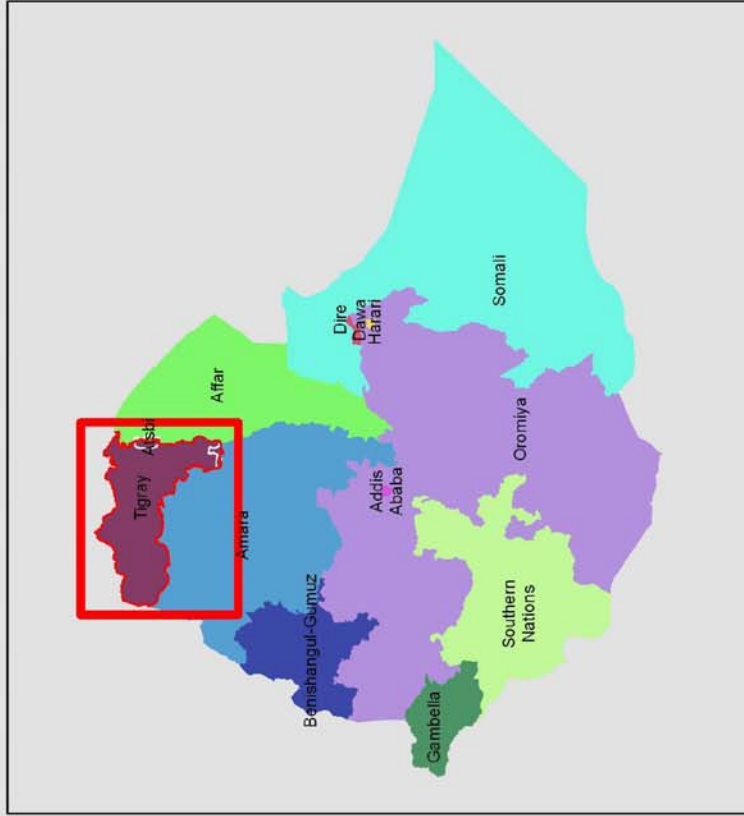
Oromiya Regional State PLWs



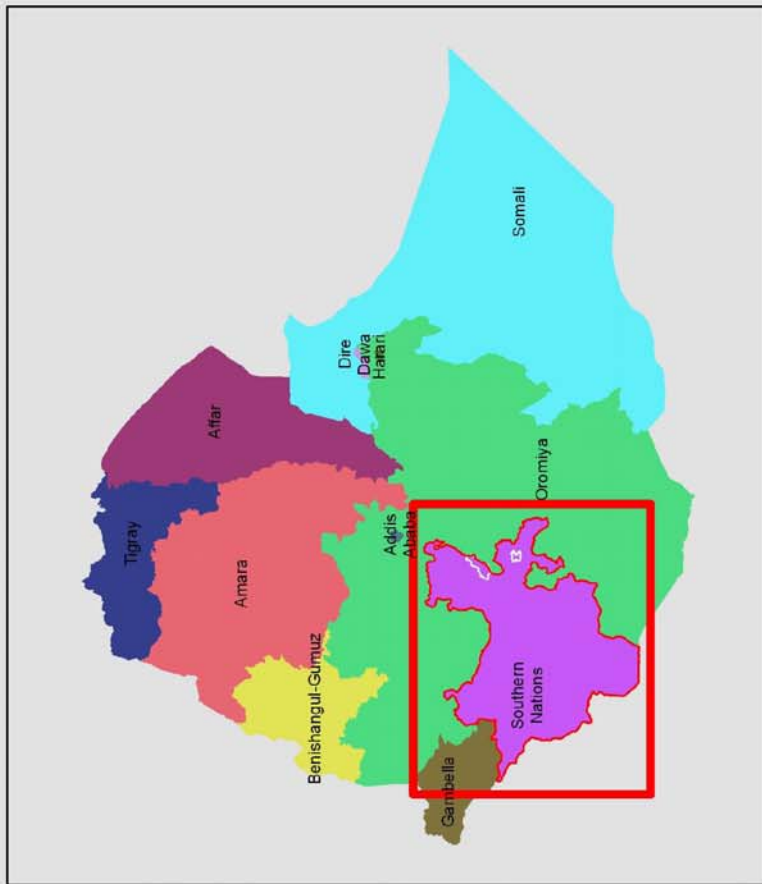

Amhara Regional State PLWs




Tigray Regional State PLWs



SNNP Regional State PLW's

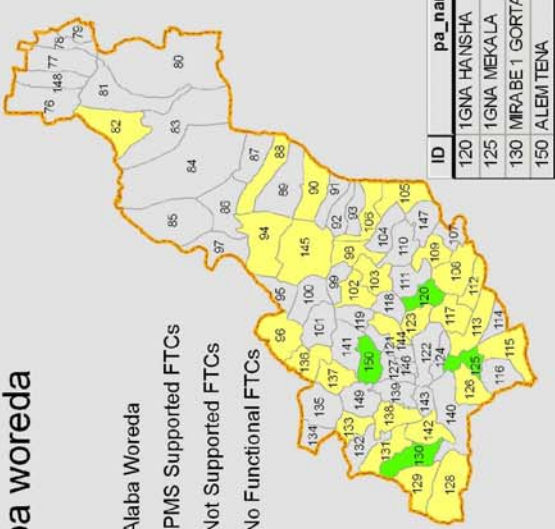
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FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT



Agence canadienne de développement international

Alaba woreda

-  Alaba Woreda
-  IPMS Supported FTCs
-  Not Supported FTCs
-  No Functional FTCs



Dale woreda

-  Dale woreda
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