THE EVOLUTION OF PASTORAL EXTENSION SYSTEM IN ETHIOPIA

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Abstract

The paper is a synthesis of national and regional policy dialogues on the future of agricultural/pastoral extension in Ethiopia. Workshops, electronic discussions and document review are the main instruments for obtaining the key issues governing/constraining the system.

Agricultural extension has a long history in Ethiopia. Some indicate that a formal/institutionalized extension system was introduced with the establishment of the Ambo Agricultural College (now Ambo University) in 1947. Others attribute it to the establishment of the Ministry of Agricultural which is over 100 years old. Despite its age, the extension system remains under developed. The important features of a well-developed extension system such as institutional pluralism, demand driven, and extension agents with relevant communication and facilitation skills are lacking.

Pastoral extension is a system for disseminating knowledge and technology that promotes pastoralism in a holistic manner addressing all its components - people/institutions, livestock and natural resources. Such an extension system is lacking in Ethiopia. Successive governments have implemented a variety of development projects with very little emphasis on extension or have simply transplanted the crop based extension system to pastoral areas. The paper develops a definition of pastoral extension that could potentially guide all extension interventions in pastoral areas and puts forward recommendations to operationalize it.

Key words: *extension, pastoralism, institutional pluralism, demand driven, communication and facilitation skills*

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1. Introduction

Future Agricultures is a Consortium that brings together researchers and practitioners from across Africa and the United Kingdom.[3] Its objective is to facilitate evidence-based policy dialogue on the future of agriculture and pastoralism. This paper is synthesis of a series of dialogues held on the future of agricultural and pastoral extension system under the auspices of the Consortium. The objectives of the paper are to:

- Explain why past extension systems failed to serve pastoral livelihoods
- Discuss national and regional responses to this critic
- Provide some international perspectives
- Suggest some issues for consideration in the design of policies and strategies for pastoral extension system

The relevant data and information for the paper is obtained from the following processes:

1. Six regional consultations on the future of agriculture and pastoralism in general covering selected areas in Afar, Amhara, Benishangul-Gumuz, Oromiya, SNNPR and Tigray[4]
2. One electronic discussion on agricultural and pastoral extension over the period of eight weeks (Nov-Dec 2009) involving a wide range of researchers and practitioners in Ethiopia;
3. Six workshops specifically on agricultural and pastoral extension: 2 national; 4 regional in Amhara, Oromiya, SNNPR and Tigray. This process was completed between January-July 2010 with the following inputs:
    - 19 paper were presented by various stakeholders (see Table 1 for details);
    - In three of the four regions, FTCs were visited and discussion with framer groups conducted;
    - Nearly 200 researchers and practitioners in agricultural and pastoral extension participated in the workshops.[5]

[3] The UK based researchers are at the Institute of Development Studies, Overseas Development Institute and University of London. The first three countries where research and policy dialogue started are Ethiopia, Kenya and Malawi. Number of countries has now expanded to about 10 in various parts of Africa. More information can be found in www.future-agricultures.org

[4] These consultations were held in 2006/07 and were used to define pathways for Ethiopian agriculture and pastoralism. The results can be found in a paper presented at the 5th EEA conference (Devereux and Teshome, 2007).

[5] Participants were predominantly men reflecting the bias in the employment structure.

4. A comprehensive review of local and international literature on the concept, principles and practice of agricultural and pastoral extension.

Table 1: Policy dialogue as source of information (Jan-July, 2010)

	No. of sessions	No. of presentations			Number of participants
		Gov't	NGO/private	Total	
National	2	2	4	6	73
Regional	4	8	5	13	129
Total	6	10	9	19	202

The paper is divided into four sections. Following this introduction, Section 1 provides conceptual background on pastoralism and extension. Section 2 is a brief account of extension models that have been practiced in Ethiopia showing the gaps in pastoral extension provision. Section 3 presents national and regional responses to the gap highlighting the inadequacy of the responses. Section 4 is a short discussion of the dilemma facing the extension system. Section 5 presents the major conclusions and recommendations as food for thought in the design of appropriate pastoral extension system.

2. Conceptual Background

2.1 What is Pastoralism?

Traditionally, two features are used to define pastoralism: major means of subsistence and frequency of movement. According to the first feature, pastoralism is a subsistence system based primarily on domesticated animal production (meat, milk, blood and hides). The use of the term subsistence is intended to exclude those who raise animals strictly for market like commercial ranches and dairy farmers. However, it is worth noting that even the so-called subsistence pastoralists rely on the market to obtain food for own consumption and also generate considerable foreign exchange for the national economy (Behnke, 2006).

Definition based on movement groups pastoralism into three: limited movement, transhumance, and nomadic. However, pastoralism is much more than the production and marketing of livestock and movement. It is the dynamic interaction between people/institutions, livestock and natural environment.

People – It is estimated that there are about 12 million pastoralists in Ethiopia which accounts for about 15% of the population.

Livestock – pastoralists produce 20% cattle; 25% sheep, close to 100% goats; and the entire camel population in Ethiopia.

Institutions- Pastoral communities have strong traditional institutions that play a wide range of roles. In Borana for example, the *Gada* system is described as a complex, elaborate and all-embracing social institution (Helland, 2011) responsible for managing natural resources, resolve conflict, information sharing and ensuring the most vulnerable in society are supported in time of need.

Natural environment- Pastoralists occupy 63% of the landmass distributed across the country. Afar and Somali are the major pastoral regions. Oromiya, SNNPR, Benishangul and Gambella also have a significant pastoral population. Like their fellow pastoralists around the world, Ethiopian pastoralists live in harsh environment with very little water and vegetation. This has taught them innovative ways of managing natural resources as articulated by an elder from Somali region:.

> " *we are responding to natural changes from rain fall pattern to the unfavorable plant species, from social life starting at family to political governance of federalism, and to the borderless movement of technologies, commercial goods and people, and global markets presenting both opportunities and challenges at our door steps*" (Pastoralist elder, in Hussien, et.al, 2011).

At this juncture, it is important to take note of the departure from the past in the way pastoralists are perceived in Ethiopia. During the Imperial Regime, pastoral lands used to be considered as "no man's land" and given at will to soldiers and dignitaries who did the regime some favour. Presently, this has changed and the term pastoralism or pastoralist is recognised in the Constitution with specific provisions for their rights (see Articles 40:5, 41:8 and 89:4).

Pastoralism is therefore an economic and social system well adapted to dryland conditions and characterized by a complex set of practices and knowledge that has permitted the maintenance of a sustainable equilibrium among pastures, livestock and people. This interdependence is governed by the following internationally recognized key principles (Admassu, 2010):

- *Sustainability:* Adaptation to a stressful environment, conservation of ecosystem diversity and mobility are the win-win components that make pastoralism sustainable.
- *Livestock adaptation:* Pastoralists keep a wide range of indigenous livestock selected based on survival and productivity, and are well adapted to the prevailing climatic conditions. Their rangelands are characterized by species diversity to optimize different range resources and conserve the ecosystem.
- *Mobility:* is crucial for sustainable management of the rangelands enabling grazing on pastures that are seasonally inaccessible.
- *Empowerment:* pastoralists need to be empowered to engage in decision- and policy-making processes, and to tackle marginalization, which is a root cause of pastoral poverty.
- *Pasture bank* - pastoralists set aside grazing areas to use as a bank during the dry season or drought times.
- *Splitting herds:* this is a coping strategy aiming at reducing competition among herds for forage and water resources and optimizing pasture use.
- *Maximization of stock number:* pastoralists accumulate livestock for a reason - to ensure survival of herds despite losses incurred during droughts or disease outbreaks.

Therefore, an extension system that fails to address the key components of pastoral livelihoods in a holistic manner and uphold these and other principles is not a pastoral extension system.

2.2 What is Extension?

Extension literally means reaching out to an audience with something. It is used in a variety of contexts. In education, it is used to reach out to adults who are interested to advance their education but unable to attend regular (day time) classes because they have to work to make ends meet. In health, extension agents reach out to the population with preventive messages so as to reduce the number of people becoming sick and visiting the congested and ill-equipped health posts.

In agriculture, extension primarily is viewed as a mechanism for taking the technologies for increasing productivity to the farmers. It is in this context that we find a diverse definition of extension (see Box 1).

Box 1: Definitions of extesnion

1. a mechanism for information and technology delivery to farmers (Morris, 1991)
2. a process that helps farmers become aware of improved technologies and adopt them in order to improve their efficiency, income and welfare (Purcell and Anderson, 1997:55)
3. a service of information, knowledge and skill development to enhance adoption of improved agricultural technologies and facilitation of linkage with other institutional support services including input supply, output marketing and credit (Gebremedhin, et. al., 2006)
4. a process by which research findings and new technologies are tested and adapted by communities through facilitation by trained extension agents. It involves joint planning, training, demonstration, continuing monitoring and evaluating of impact. It also includes advising and coaching of communities … (PFE, IIRR and DF, 2010:104).
5. a policy instrument for a government to bring about desired changes in political, socio-economic, cultural and environmental development. Agricultural extension could focus on (i) technological innovations (to increase production and technical efficiency); (ii) institutional innovation (organizational and leadership development). Extension is a dynamic concept that cannot have a single universal definition (obtained during SNNPR consultation, see Tafesse, 2009)

The first definition is too narrow. It focuses on delivering the message and implies that the farmer is a passive recipient of the message. The second definition is better in that it sees extension as a 'process' and indicates that extension should not stop at delivering the technology but also ensure farmers' income and welfare are improved. The third definition is much broader. It goes well beyond delivery of the technology and state that extension should also facilitate linkage with input and output markets and credit. The fourth definition is the most comprehensive and may be regarded as a contemporary definition of agricultural extension. The last definition, obtained during the SNNPR consultation, sees extension as an instrument of change and more importantly, it acknowledges the difficulty of providing a singly universal definition.

However, for the purpose of formulating a definition for pastoral extension, we use Definition 4 as a base because it emanates from a writeshop which brought together researchers and practitioners in pastoralism. Some modifications need to be made to

reflect the key components of pastoral livelihoods explained earlier. Therefore, a working definition of pastoral extension is stated as follows:

> *'…. a process by which research findings and new technologies designed to improve pastoral livelihoods [people, institutions, livestock and natural resources] are tested and adapted by pastoral communities facilitated by trained pastoral extension agents in collaboration with pastoral institutions. It involves joint planning, training, demonstration, continuing monitoring and evaluating of impact. It also includes advising and coaching of pastoralists and their institutions…'*

This review of definitions raises important questions. What is the scope of extension? Where is the boundary? Defining the scope of extension is not an academic exercise. It guides practice. Therefore, if the definition is too broad, then extension agents are loaded with too much responsibility and may fail to deliver the core extension message. This indeed has been one of the problems in the Ethiopian extension system.

If the definition is too narrow, then extension will be locked into a specific area and leave the farmers isolated - not linked to other services. Finding an optimal definition is not easy or may not be desirable. But it should at least take the following into account:

- extension should have core messages to transmit in a given livelihood or production system or value chain; and
- it should facilitate linkage to other services; not deliver them itself. This was the classic error made by the Ethiopian extension system when its Development Agents were engaged in activities that puts them in conflict with the farmer. These include disbursement and collection of loans, distribution of food aid, and political activities (electioneering).

2.3 Who should provide extension services?

This is not a simple question for which readymade or straightforward answers exist. It is a question that can be posed in relation to all other services – education, health (animal and human), input delivery, and advisory service. There are additional questions one should ask before arriving at the answer for the basic question: Who is financing the extension service? Who is delivering the extension service? What are the pros and cons of each option?

The government has the option of financing as well as delivering the extension service, which is by and large the current model of extension service delivery. Public sector commitment is considered the key strengths of the Ethiopian extension system compared to many other countries that have a mixed mode delivery system. The government has stepped in to deliver a service because it believes that there is market failure. Equity consideration is also another driving factor. That and the hitherto disadvantaged should be given the opportunity.

However, an extension system delivered entirely by the public sector has not proven effective even in the Ethiopian context. There are complaints of untimely input delivery, DA ineffectiveness, and non-functioning FTCs. Furthermore, such an extension system puts considerable pressure on the tax payer which ends up financing a service that could be financed, either wholly or partly, by the private sector.

In a mixed mode delivery system, the government could finance a private entity or an NGO to deliver the extension service. Alternatively, the non-state sector could finance as well as deliver an extension service which is happening in Ethiopia on a limited scale. In any case, such a mixed mode delivery system requires high degree of trust and transparency between the various partners.

There is no shortage of policy statements on the role of the non-state sector in service delivery. These intentions have been implemented in sectors such as education and human health. However, in agricultural/pastoral extension, where it is badly needed, it largely remains intention as the following statement shows:

> *For many years the provision of veterinary service in our country has been the sole responsibility of government. However, we now acknowledge that there are crucial roles for many other actors in the provision of veterinary services. Indeed the future policy for animal health services shall emphasize partnership between government, private sector and livestock keepers, with the aim of building a viable and self-sustaining animal health care delivery system* (MoARD, 2004).

Despite such statements, the use of CAWHS remains on a small scale experimented by NGOs. Table 2 below gives various options of public/private financing and delivery of extension service.

Table2: Public/Private/Non-state Actors Responsibilities for Extension Delivery

Financing of extension service	Delivery of extension service	
	Public	**Private/Non-state actors**
Public	Free extension/advisory service relying on public funds to cover operating and capital expenditure.	Voucher systems under which the government pays a pre-set amount to a private extension/advisory service given to targeted farmers (e.g. poor, marginalized, remote).
Private/Non-state actors	Extension fees and income from foundation grants, industry contracts and privately generated endowments cover part of the cost of publicly delivered extension system.	Extension fees and income from foundation grants, industry contracts and privately generated endowments cover the full cost of privately delivered extension system.

Source: Adapted from a matrix developed for education sector (Teshome, 2001)

3. Extension Models in Ethiopia

3.1 Past models of extension

The Ethiopian extension system evolved over the last 100 years but the last fifty years is probably better documented than its predecessor. This period has been dominated by the classic transfer of technology (ToT) approach which is divided into four major periods (Abate, 2009):

- Extension under the Imperial Collage of Agriculture and Mechanical Arts (1953-1963)
- Conventional Extension Approaches featuring the T&V (and later the modified T&V) approach (1963-1968)
- Comprehensive Integrated Package Projects (1968-75)
- Minimum Package Project I (1971-74)

The second dominant period is the so-called Quasi Participatory Extension Approaches featuring the land reform and the development of cooperatives (1975-1980). These radical measures had profound effect on the extension system leading to a paradigm shift from the classic ToT to the “quasi-participatory” approach. The Minimum Package Project was also extended to its second phase (MPP-II) during this period (1980-85).

The T&V approach, promoted by the World Bank, is perhaps the most evaluated and criticized approach to extension (Dejene, 1989; Belay, 2003; Belay and Abebaw, 2004; Davis, 2009; Zhou, *n.d*;). These authors by and large agree that T&V is a top-down and supply-driven system promoting agricultural messages that had been designed and developed by research scientists, with limited input from the technology users (the farmers). Zhou (*n.d)* and Dejene (1989) observed that the system had some success at least for a period of time. In Ethiopia, it was found effective in disseminating innovations and increasing yields among contact farmers, upgrading extension agents' skills, and imparting valuable lessons for other extension systems. At same time, the system's reliance on small groups of contact farmers for rapid diffusion of innovations to the masses and the apparent absence of women were some of its shortfalls. The system was finally abandoned in late 1990s.

Perhaps in recognition of these shortfalls, Ethiopia implemented the modified T&V in its final years and up until the introduction of the PADETS in 1995. The key modifications are summarized as follows:

Table 3: Some key modifications to the T&V extension system

Conventional T&V	Modified T&V
One extension agent for 800 farmers	One extension agent to serve 1300 peasant households in surplus areas (2500 farmers in non-surplus producing areas)
Extension agents trained fortnightly	Extension agents trained monthly
Zonal subject matter specialists were trained monthly	Zonal subject matter specialists were trained quarterly

Source: based on Belay (2003)

The comprehensive integrated package projects were introduced as areas pilot projects in recognition that it takes more than technology transfer to achieve increased agricultural output. These projects did not introduce any significantly improved technologies assuming that existing technologies are adequate and that the major limiting factors were lack of coordination among sectors and services. To this end, input supply, credit, extension; marketing and infrastructure were made available in a coordinated manner (Wanson and Claar, 1984). Examples of such projects in Ethiopia were the Chilalo Agricultural Development Unit (CADU) financed by SIDA and the Wolaita Agricultural Development Unit (WADU) financed by the World Bank. The former

was expanded to cover the whole of Arsi and subsequently Arsi and Bale financed by the Italian Cooperation. WADU was rather short-lived and terminated in early 1980s.

According to the World Bank (1973), the impact of these and similar projects has necessarily been limited by their high cost and trained manpower requirements thereby making them too expensive to be sustained within the government regular extension programs.; Their benefits have however included considerable experience and technical knowledge in assisting small farmers. Based on this experience and in response to the need to increase food production and reach more peasant farmers over large areas, Government in 1971 initiated its experimental Minimum Package (HP) Program. Under this Program the Ministry of Agriculture through its Extension and Project Implementation Department (EPID) introduced throughout the highlands a few proven technical innovations, notably the application of fertilizer and improved seeds, in association with farmer credit. This project was extended for a second term and lasted until 1985.

3.2 The Present Model of Extension

The present model of extension system is characterized by public ownership through heavy investment in infrastructure (Agricultural Technical and Vocational Training institutes and Farmer Training Centres) and deployment of Development Agents formerly known as extension agents. According to Mandefro (2009), so far,

- 60,000 DAs (3-4 DAs per PA) have been trained and deployed;
- In addition, 1 Cooperative Promoter and one Para Vet per 3 PAS have been assigned;
- 15,000 FTCs (1 FTC per PA) have been constructed;[6]
- Multi-purpose farmer training centres have been upgraded to ATVETs. There are about 25 ATVETs around the country

The present model is referred to as the Participatory Demonstration and Training System (PADETS) which has been in place since 1995. PADETS is an agro-ecology based and market oriented technology dissemination and extension service.[7]

[6] As discussed later in the paper, most of these are poorly equipped and not functional except those supported by NGOs or special projects.

[7] For a comprehensive review and evaluation of the PADETS see EEA/EPRI (2006) and Belay (2003).

In the last five years, the Ethiopian extension system has been under the spotlight. First, it was the subject of debate at the 7th Congress of the Ruling Party (EPRDF) in Hawassa. The DAs were heavily criticized for showing little interest in agriculture and pursing studies in Accounting, Business Management and the like with a view to leaving the rural areas. This culminated in the Amhara Regional State taking a very controversial decision of banning DAs from pursuing any further study by any mode of education (regular or distance) except those sanctioned by the government (i.e. official scholarships). Other regions have not followed suit.

There were also two major reviews that generated evidence on status of the extension system. The first is by the Food and Agriculture Organization (FAO, 2008) and the second by the International Food Research Institute (IFPRI, 2009) on behalf of the Gates and Melinda Foundation.

Both reviews identified strength and weaknesses of the system and the opportunities and challenges it faces. The FAO study drew lessons from a number of Asian countries that have used extension to achieve the Green Revolution. It however cautioned that since it is almost four decades since the Green Revolution, the relevance of the lessons should be tested before implementing them in the Ethiopian context.

Ironically, the IFPRI study identified public ownership (resourcing and delivery) as strength of the extension system at a time when institutional pluralism is considered the most effective mode of financing and delivery of extension system.

The system has several shortcomings, however. First, the scope of extension is not clearly defined. The general perception is that extension has a broad role to play. This is perhaps the rationale behind changing from 'extension agent' to 'development agent' and led to their involvement in several non-extension activities including tax and loan collection.

Second, the system does not have feedback mechanism from the farmer to the DA; from DA to the Supervisor and vice versa. There is also no systematic feedback on the performance of the system from the woreda to the region and to the federal structure. Decision makers rely on ad hoc review and evaluation processes. This has indeed promoted the Government of Ethiopia to set in motion the design of a Monitoring

Evaluation and Learning (MEL) system.[8] When complete, the system is expected to monitor, valuate and document lessons on a range of variables including farmer satisfaction on the extension service and adequacy of support DAs get from supervisors and the support the woredas get from the region. At the time writing this paper, the government is preparing to undertake a baseline study.

Third, DA training is weak. DAs are the frontline extension workers and their skill and competence is key to the system. In this respect, a review of the DA training curricula showed that it is strong in the provision of the core subject matters such as agronomy, animal production and natural resource management but weak in important areas such as extension and communication, market extension, gender, planning and monitoring skills. Career structure for DAs has been talked about but not put in place. There is a general lack of (shortage of) on the job training (see also EEA/EPRI, 2006). To make matters worse, DAs have been criticized for pursuing further education and in at least one region they are banned from pursuing such courses.

Fourth, the participation of communities and their organizations (e.g. cooperatives) in the design and delivery of extension is low. According to Karthikeyan (2010), cooperatives extension is a special category of extension that aims to cultivate the cooperative culture (e.g. universal principles and values) among members and the general public. Cooperatives are also ideal for disseminating technology through group training. When extension agents work with groups (organized or unorganised) the adoption rate have been higher than when they work with individual farmers. However, in the Ethiopian case the individual approach (one-to-one) has been the dominant form of extension (EEA/EPRI, 2006).

Fifth, although the government is praised for investing heavily in training and deployment of DAs and constructing FTCs, there is shortage of regular budget for running the FTCs. Some have to depend on short term NGO projects to function. DAs lack basic facilities particularly transportation to move around.

Ultimately, an extension system is judged by its contribution to increased productivity and total production. To date, there is no strong evidence that it has achieved this. Most

[8] This project is the first of its kind coordinated jointly by Oxfam America and the Ministry of Agriculture with technical support from SG-2000 Africa, a private consulting firm Keystone and ALINE from the University of Sussex, UK.

of the increase in total production comes from area expansion rather than increased productivity. Table 4 and 5 below summarize the SWOT of the extension system.

Table 4: Strength and Weaknesses of the extension system

Parameters	Strength	Weakness
Public support	Heavy investment in DAs, FTCs, and ATVETs The government has relieved extension agents from disbursing and collecting loans	Despite these support some studies suggest that: only 39% of farmers use the complete packages , only 36% want to continue to use extension packages. Close to 80% of farmers do not apply recommended soil and water conservation measures weak in gender perspectives youth not addressed sufficiently Extension remain involved in other activities that have the potential for conflict with farmers (e.g. food aid distribution)
Coverage	Recognized as the largest system in Sub-Saharan Africa Each Woreda has an office of agriculture with extension unit; 60,000 DAs (3-4 DAs per PA); and 15,000 FTCs (1 FTC per PA)	Insignificant proportion of farmers enrolled in various aspects of extensions: livestock technology (12%), natural resources management (3%), post-harvest technology (0.4% and farm implements (0.1%).
Institutional pluralism	Several NGOs implement participatory/innovative extensions systems Development of farmers organization (from basic service coop up to coop. federation)	NGO efforts having little impact on reforming the extension system Government makes nominal recognition of their efforts. Cooperative role in extension limited to fertilizer distribution.
Institutional and human capacity	See coverage above	Most FTCs not well equipped to serve the purpose they are established for DAs knowledge and skills in communications, planning and monitoring is weak. As a result, little involvement of farmers in planning (68% of the DAs responded that they were not involving farmers in the planning of extension activities).

Table 5: Opportunities and challenges facing the extension system

Parameters	Opportunities	Challenges
Policy environment	Strong commitment on the part of the government to transform agriculture (formulated favorable agriculture policy, Scaling up the best practices)	Extension system not catching up with government drive to transform agriculture
Donor support	Donors clearly see the role of extension is agricultural transformation and supporting it	Donor support focusing on the public sector and not pressing enough for institutional pluralism
Research and higher education	Increasing number of higher learning institutions/universities in both the highlands and pastoral areas	The government focus on technology transfer may undermine the development of local research.
	Research centers established in pastoral areas	Research centers in pastoral areas focusing on crop research in view of the government's desire to press for agricultural development in pastoral areas
Access to and linkage to finance	The new food security programme has made it compulsory for finance to be managed by financial institutions (MFIs and RuSACCOs) MFIs increasingly convinced that the poor are creditworthy	Limited number of RuSACCOs Weak institutional capacity of the existing RuSACCOs

Source: both Table 3 and 4 based on FAO and IFPRI reviews (FAO, 2008; IFPRI, 2009) but updated for recent developments

For pastoral areas the reality is different. Both the FAO and IFPRI reviews paid very little or no attention to pastoral extension where there is a considerable gap and a major concern for this paper.

4. Towards a Pastoral Extension System

To some extent the low attention given to pastoral extension by the FAO and IFPRI reviews is understandable because there is not as such a pastoral extension system to

review. Butcher (*n.d.*) explains the dearth of knowledge, information and system for pastoral extension as follows:

> *…. extension is a term used less in the pastoral literature than in literature dealing with livestock within mixed-farming systems. Much of the pastoral literature clearly has an element of extension, but terms such as development, management or administration are preferred.*

Hailu (2010) argues that prior to designing a pastoral extension system, it is important to understand the physical and socio-economic characteristic of pastoral areas. These are:

- Low population to land ratio: 0.2-0.6 HH/ m^2 compared to 20-150 HH/ m^2 in highlands. This has consequences for time spent travelling and hence number of visits per extension agent and on cost recovery.
- Low population densities often associated with lack of access roads. Difficult to obtain reasonable ratio of extension agent per target pastoral population.
- Increased pressure on land leading to periodic land insecurity/conflict. Inflexible extension service coupled with spill over agrarian approach.
- Despite Constitutional recognition, pastoralists are still marginalized. There is less consideration/acceptance of traditional NRM and traditional institutions. Absence of community consultations and common vision for development/extension approaches.
- The pastoral areas face recurrent risk often leading to disasters. From this point of view, extension approaches were not holistic and not focus on asset building/diversification.
- Pastoral communities are diverse and have indigenous knowledge which extension services designed for highland areas do not consider.

These and other features make the highland crop extension system unsuitable to the pastoral context. What has been the response to the gap in pastoral extension?

4.1 Response to the Need for Pastoral Extension System

4.1.1 Past Governments

Although extension models have been experimented mainly in the highland agricultural areas, it is by no means suggested that the pastoral areas have been totally neglected. It is a question of relevance and appropriateness! Abate (2009) and PFE, IIRR and DF

(2010) reviewed the major livestock development projects implemented over the last half century[9] and found that these efforts did not yield the desired results for a number of reasons. For example,

- To much emphasis was placed on the technical and technological aspects while neglecting the socio-cultural and ecological aspects of pastoral production systems;
- The projects did not integrate local participation and knowledge into their design;
- Little attention was paid to the other "soft components" like institutional development and capacity building.

The failure of earlier projects has inspired a new approach as manifested in major departures from the past (i) Constitutional recognition of pastoralists rights presented earlier in Section 1; (ii) Various policy statements alluding to pastoral extension system; (iii) design of pastoral and agro-pastoral extension strategy and (iv) new institutional arrangements. These are examined from the perspective of federal and regional governments as appropriate.

4.1.2 Present Government

4.1.2.1 Federal level response

1) Policy statements

In addition to the Constitutional recognition of pastoralist rights (see Section 1.1 above), there are numerous policy statements that allude to the provision of extension service in pastoral areas. For example, the Rural Development Policy and Strategies (RDPS) recognize the wide range of traditionally developed pastoral knowledge about livestock husbandry which the government extension system should not ignore.

> *"without recognizing and basing our efforts in this knowledge, attempting to improve livestock husbandry in this [pastoral] area cannot be useful and achievable". (FDRE, p. 138, Amharic)*

It is encouraging to find such statements in an overarching policy document but the fact remains that the emphasis is on livestock alone does not consider the other key elements presented earlier. Additional statements from the Ministry of Federal Affairs (MoFA, 2008) are given below:

[9] For a comprehensive review of the five livestock development projects see PFE, IIRR and DF (2010:104-105).

Box 2: Policy statements alluding to pastoral extension system

- Efforts will be made to add value to pastoral and agro-pastoral products through the establishment of agro-processing factories. Both crop and livestock production will be strengthened through dissemination of improved technologies in water harvesting, irrigation, range management, livestock disease control, livestock and crop-based marketing as well as through the revitalization of extension services.
- There will be an emphasis on providing appropriate infrastructure and social services and tailoring research and extension programs more to the needs of dry-land agriculture and livestock development …
- The provision of drinking water, grazing land and extension services for livestock production are essential components of support that would be provided to the pastoral communities …
- Agricultural research and extension services addressing special requirements of the pastoralists will be undertaken to resolve problems specific to pastoral areas
- Strengthening of extension networks and outreach services in pastoral and agro-pastoral areas,
- Strengthening agricultural extension services through the efficient implantation of TVET and FTC programs and institutional support services in the process of pastoral development;
- Strengthening research-extension-pastoral/agro-pastoral linkages.

The government has not stopped at issuing policy statements but has also been designing strategies and institutional arrangements to operationalize these intentions as presented below.

2) Draft pastoral/agro-pastoral extension system

The Pastoral Unit of the Ministry of Agriculture drafted a pastoral and agro-pastoral extension (PAP) strategy in 1999. National and regional workshops were organized to discuss and finalise the draft. The main thrust of the strategy was human centered development approach where holistic and sector integrated methodologies were to be applied. The extension strategy was based on Pastoral Kebele Extension Teams, Community Development Teams and Community Animal Health Workers. This strategy was considered the most innovative but not fully operationalized (PFE, 2003; PFE, IIRR and DF, 2010),

In 2009, the Pastoral Extension Team (PET) produced another draft PAP 'agricultural' extension system. This effort comes in the aftermath of the expansion of research stations/centres in pastoral areas and aims to improve production and productivity through (i) generation of sustainable technologies; (ii) establishment of research extension councils in pastoral areas; and (iii) formation of PAP groups (similar to FRG in the highlands). Table 6 compares the objectives/operational modalities of the 1999 and 2009 PAP extensions strategies.

Table 6: Comparison of the 1999 and 2009 PAP extension strategy papers

Objectives/ operational modalities of the 1999 PAP extension strategy	Objectives/operational modalities of the 2009 PAP extension strategy
Improve livestock quality by improving water points, forage production and breeds, expanding animal health services and developing market infrastructure	Livelihood and production system based services
Integrate crop production and other agricultural activities where feasible side by side with livestock production through the introduction of small scale irrigation	Market oriented extension service promotion
Provide appropriate infrastructure and social services including small-scale irrigation and drinking water	Diversification/specialization
Tailor research and extension programs to the needs of dryland agriculture and livestock development	Promoting PAP training centres
Put in place regulatory and quality assurance measures	Participatory extension
	Awareness raising and mobilization; organizing people
	Integrated river-based watershed development

The 2009 strategy responds to most of the critics of past systems particular responding to livelihood and production differences and diversification. However an independent review of the strategy paper provided the following insights.[10]

[10] This critic of the draft document is based on a presentation by Berhanu Adnew at the national workshop on pastoral/agro-pastoral extension on July 12, 2010 at the Ghion Hotel, Addis Ababa.

a. The main thrust of the strategy is to promote agricultural development in pastoral areas

This is clear from the title itself which says "pastoral/agro-pastoral participatory agricultural (*gibrina*) extension". The government argues that pastoral areas have already taken up crop production as a way of adapting to climatic conditions and therefore they need extension support for their initiatives. To this end, measures have been taken to (i) promote the agricultural development initiatives by introducing suitable technologies for crop production along with fodder, vegetables, fattening and water harvesting; and (ii) improve livestock productivity through training of experts, and undertaking livestock health and marketing activities.

However, it is important to recognize that pastoralists engage in crop production as an opportunistic activity rather than as shift in livelihood. They grow crops along the river-banks and also around their homesteads when they get some rain. It is appropriate that they should get support for these initiatives but should not be interpreted as shift in livelihood.

b. The extension strategy should be developed in the context of the overall pastoral development policy. This is not explicit enough in the strategy document.

In response to this critic, the designers explained that the proposed system is based on the Rural Development Policy and Strategy which clearly states the future direction of pastoralists and agro-pastoralists development - voluntary settlement. The extension system will support this transition.

c. On balance, the proposed extension system talks more about agro-pastoralists and crop production than pastoralists. This implies that there is some degree of pessimism about the sustainability of pastoral livelihood.

The designers rejected this notion and argued that the central role of livestock has not been undermined. Besides livestock, crop production will be given attention where there is possibility for crop production as indicated above.

This argument was not strong enough and the extension strategy should be informed by research that outlines alternative scenarios for pastoral development such as those outlined in Box 3.

Box 3: Scenarios for pastoral development

Scenario 1 – under circumstances where the natural environment is productive and population pressure low, where pastoralists have access to good pasture and are active only in national and local markets, many will wish to maintain a livelihood based primarily on the raising and sale of livestock thereby *sustaining pastoral livelihoods*.

Scenario 2 – in condition where pastoralists are under natural resource pressure, but receiving strong demand from national and international markets for pastoral products, members of pastoral communities will more likely expand into milk processing, meat processing and improving the quality of export skins and hides as a strategy for *adding value for diversification*.

Scenario 3 – if Ethiopian pastoralists and traders gain increasing access to international markets and if natural resources are abundant, they may move quickly to scale up the quality of production to take advantage of high prices for animals and animal products abroad in a scenario of *expanding export trade*.

Scenario 4 – where resources are scarce and livestock markets inaccessible, some pastoralists will need to find *alternative livelihoods*, shifting away from pastoralism towards complementary activities such as tourism and financial services.

Source: The Future of Pastoralism in Ethiopia, 2007

d. The document does not clearly bring out a number of critical issues which indicates that it did not follow a systematic procedure for strategy development.

These include but not limited to:

- Lessons from the previous strategy – why it was not implemented or if implemented successes/failures
- Lessons from other countries with dominant pastoral livelihoods
- The level of infrastructure development (e.g. roads, communication, markets)
- Implications of large scale investments in pastoral areas
- Rangeland and livestock genetic resource conservation and protection

- How the packages were selected
- The importance of piloting/phasing and drawing lessons prior to full scale implementation.
- No mention of cross border trade and its implications for extension service
- How it adopts to various unforeseen events. For example, conflict and disaster risk reduction and climate change adaptation measures
- Cost of the proposed extension service and the source of finance

3) Institutional arrangements

What is the institutional arrangement to drive the pastoral development agenda in general and pastoral extension system in particular? At federal level, the responsibility is shared between the Ministry of Agriculture and the Ministry of Federal Affairs. The former is responsible for production and productivity aspects of development which includes the development of pastoral extension system. To facilitate this process, the Ministry established the Pastoral Extension Team (PET).

The Ministry of Federal Affairs is responsible for governance and administrative aspects in the so-called developing regions (formerly known as emerging regions) including all pastoral areas. It has the mandate for ensuring that these regions do not fall behind in the implementation of national development plans and meet the MDGs. Conflict management/resolution is a key activity for the Ministry. It regularly monitors and responds to conflict situations in all conflict prone areas.

The Standing Committee for Pastoral Affairs in the House of People's Representative, is an important instrument for advancing the pastoral agenda. It pays regular visits to these areas to discuss issues with local authorities and communities. It also looks into pastoral development projects and programmes implemented by the Federal Government and other agencies. Ensuring appropriate extension system for pastoral areas is one of its objectives.

Pastoral Taskforce is established to coordinate the formulation of the food security programme, the PSNP in particular. It is composed of government, donors and NGOs working in pastoral areas.

Pastoral Forum Ethiopia (PFE) is a local NGO established in 1998 and working with pastoralists and partners to advance the rights of pastoralists. It implements projects in

areas of advocacy and lobby, networking, good governance, and capacity building. It initiated the idea of Pastoral Day which is now institutionalized within government and is an annual event.

These institutional arrangements are all relevant and important but as far as pastoral extension is concerned, the pastoral extension team within MoA is the most relevant and needs particular attention. Recent developments indicate that the team is required to work closely with the HAB[11] team. Its effectiveness, therefore, very much depends on to what extent the HAB component is fully implemented in pastoral areas.

4.1.2.2 Regional level response

Regional governments by and large adopt policies and strategies developed at federal level. In the absence of a clear direction on pastoral extension from the Federal Government, how are the regions responding? Two cases are presented below.

Case 1: – Oromiya[12] - Pastoral communities are found in Sothern Oromiya (Borena and Guji zones) bordering with Kenya and Somali Regional State; in East Shewa (the Kereyu) and in West Arsi. The livestock sector in general is very important to the region. Oromiya produces 44% of the nation's cattle population, 32% of sheep, 45% of goats and 48% the beehives. In spite of this contribution, livestock is one of the most marginalized economic sectors in terms of research, extension and education.

The restructuring of the extension service is highly influenced by the Business Process Re-engineering (BPR). Following the completion of the BPR process, the previous Department of Extension was changed to Regional Agricultural Extension Service Delivery Business Process. Contrary to other regions, which have one core extension process, Oromiya has six core extension processes:

- Surplus Producing Areas Agricultural Extension Core Process
- Dominantly Coffee Growing Areas Agricultural Extension Core Process
- Moisture Stress Food Insecure Areas Agricultural Extension Core Process
- Irrigation Extension Core Process

[11] Household Asset Building is one four components of the food security programme which is overseen by the Extension Directorate.

[12] Based on presentations by Misgana Lelissa (Bureau of Agriculture), Tamiremariam Woldemeskel (Livestock Production, Health and Marketing Agency), Dr. Belay (Pastoral Development Commission) and discussion with farmer research group near Ambo Town.

- Pastoral Extension Core Process
- Livestock Extension Core Process

Although the pastoral/agro-pastoral areas fall under the moisture stress food insecure areas, in recognition of the marginalization these areas suffered in the past, the Oromiya Regional Government established Pastoral Extension Core Process within the Oromiya Pastoral Development Commission. Furthermore, in response to the long standing criticism that the extension system is crop biased, the region established the Livestock Extension Core Process within the Livestock Production, Health and Marketing Agency. Oromiya's attempt to distinguish between pastoral extension and livestock extension is significant.

While the Pastoral Extension Core Process is still under development, the Livestock Extension Core Process is at an advanced stage. The Agency has identified the constraints to livestock development that the extension service could address wholly or partly:

- Poor animal nutrition
- Low genetic potential of indigenous breeds
- Prevalence of various animal diseases
- Poor husbandry practices
- Professional biasness (more attention given to crops)
- Problems of institutional set up
- Inadequate trained and qualified manpower
- Absence of collaboration of stakeholders

The regional and woreda extension process are expected to perform similar activities that include (i) identifying farmers' problems/needs; (ii) provide demand driven extension and (iii) establish strong communication between research, extension and farmers.

In summary, the overall regional policy and strategic direction on extension are the following:

- Extension remains primarily government concern
- Focus on high value products
- Promote income diversification
- Use regional land and labour resources to the fullest

- Promote natural resource conservation/appropriate environmental balance
- Link farmers, pastoralists and agro-pastoralists to agro-industry and markets
- Provide extension service that meets community needs
- Encourage farmers, pastoralists and agro-pastoralists to form groups/cooperatives based on their line of activity (milk collection, processing and marketing, poultry production, fattening and beekeeping).

Case 2: SNNPR[13] - The largest pastoral population of the region is found in South Omo and Bench Maji Zones. Pastoral communities are also found in Kambata and Hadiya Zone. The region has adopted the Participatory Demonstration and Training System (PADETS) since 2003. Accordingly, the region promoted (i) crop production (ii) natural resource management/protection (iii) livestock and fishery development and (iv) rural women development.

A wide range of activities have been implemented in order to increase the productivity of livestock (see Table 5 first column). Despite implementing such an extensive array of activities some of which are beyond extension, the regional Pastoral Desk strongly feels that they are inadequate to be coined 'pastoral extension service'. Therefore, a number of improvements have been put forward for further discussion within and outside the region. Table 7 summarizes both the current and future pastoral extension interventions.

[13] Based on presentations by Simayehu Tafesse (Bureau of Agriculture); Pastoral Affairs Desk; IPMS Project, and discussion with farmers at an FTC in Yirgalem area.

Table 7: Pastoral extension interventions: current and planned - SNNPR

Current extension activities in pastoral areas	Planned activities to improve extension service in pastoral areas
Introduced camels Provided improved milk processing technologies Distributed improved chicken targeted at women Introduced modern beehives Introduced improved forage seed to be sowed in enclosed areas Provided vaccination service Constructed ponds to improve water supply for livestock Constructed animal health posts and assigned animal health workers Supplied fishing equipment to pastoralists around Omo River and organized fish producers cooperatives and cooperative unions that could address market constraints Established livestock market centres Identified harmful traditional practices through community dialogue Provided flour mills to reduce women burden Introduced fuel saving stoves Promoted income generating activities	develop an ecologically friendly irrigation system develop irrigation extension system promote irrigation cooperatives encourage research institutions to develop crop varieties that can withstand the harsh environment (e.g. short cycle crops) adapt watershed management to pastoral areas improve number and mix of DAs to reflect conditions in pastoral areas shift the emphasis from head count to productive livestock rearing including expansion of artificial insemination services production and storage of pasture; improve handling natural pasture improve water supply for livestock provide market information introduce modern abattoirs and linkage to export market together with improved quality standards controlling invading external weeds supply drugs at affordable prices; on a timely and at the required quantity address financial constraints through revolving funds using livestock as collateral

Source: Based on presentation by the Pastoral Desk of SNNPR

The region has gone a step further and developed a model for pastoral extension coined "participatory and market oriented pastoral extension service". Figure 1 below is an illustration of how the various components of the proposed pastoral extension system are linked.

4.1.3 Non-government responses[14]

Non-government organizations play important roles in providing extension service as part of their agricultural development work. As a matter of fact, they are responsible for introducing participatory extension service which the government is beginning to take up. The types of extension systems implemented by NGOs include the following:

- Participatory Forest Management/Farmer Participatory Research (FARM Africa/SOS-Sahel)
- Integrated Pest Management/Farmer Field School (Save the Children UK)
- Farmer Field School/Community Based Institutes (Agri-Service Ethiopia)
- Participatory Innovation Development (Prolinnova Ethiopia)
- Participatory Technology Development (SG 2000 Ethiopia)
- Ecological oriented extension (SDA of ISD)
- Urban agriculture (Environmental Development Action Ethiopia/JeCCDO)
- Asset-based Community Development (Oxfam Canada, HUNDEE, KMG and Agri-Service Ethiopia)
- Pastoral extension (PCDP)

Four cases of non-state actors are given below.

Case 1 – Agri-service Ethiopia (ASE) - Agri-service Ethiopia (ASE) is a local NGO established in 1969 operating in Oromiya, Amhara and SNNPR. Participatory Learning Approach (APL) is an extension and training strategy that ASE is implementing. Community Learning Forums (CoLF) are formed with the following functions:

- test and adapt new agricultural technologies or practices
- identify, cultivate/develop and share innovations of local people
- facilitate researchers and farmers meeting in a cooperative and appreciative spirit
- discuss with communities the impact harmful traditions and cultures
- encourage farmers to start new agricultural business and acquire entrepreneurial skills
- support farmers to access better input and output markets
- promote adult education

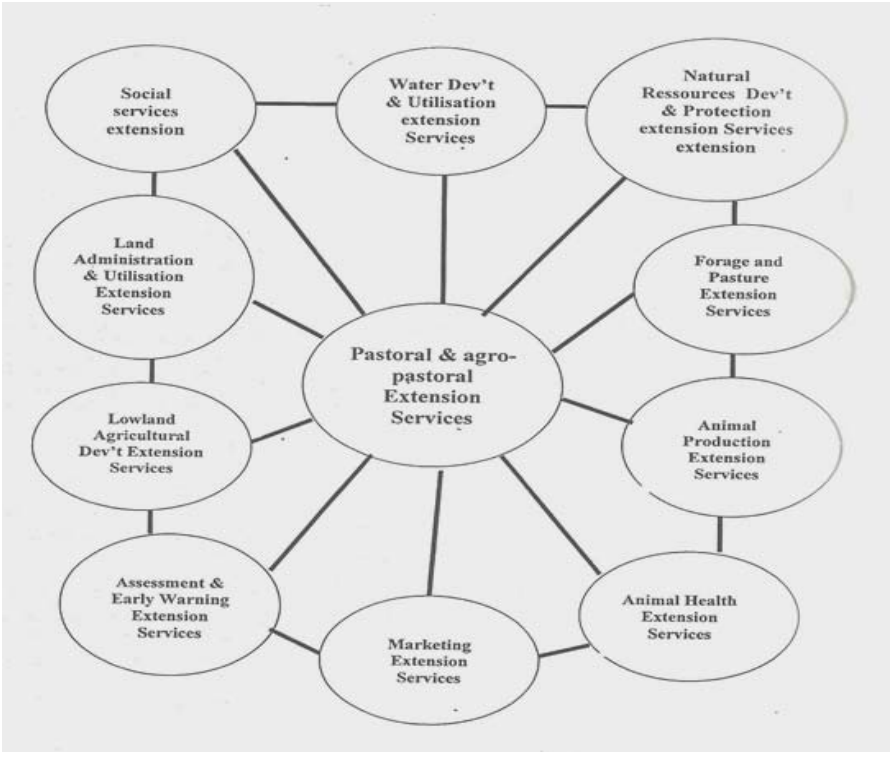
[14] This section draws on presentation by NGO representatives at the regional consultations. In Amhara, the presenters were Ashagrie Getnet (Agri-Service Ethiopia) and Negussie (ORDA). In Oromiya; Berecha Turi (SG-2000); Abera Abebe (ASE) and in SNNPR, IPMS Project Coordinator.

Innovations are often triggered in response to critical technology constraints and price incentives.[15] For example, in one of ASE operational areas, beehives and queen replacement innovation was triggered by low productivity of traditional hives, aggressiveness of bee colonies; and frequent swarming/absconding. Queen replacement is a difficult innovation because it involves, making selection by changing the bee behavior, rearing the queen from productive and docile colony and replacing the unproductive ones. Those who replaced the queen have seen improved bees behavior, reduced swarming and improved productivity by two-fold. Further benefits of innovation are that it helps document and share farmers' knowledge which otherwise could be lost. Farmers who innovated witnessed improvement in honey quality; reduced damage to bees during harvesting and inspection; manageability; and accessibility and affordability to the poor.

Case 2: Organization for Relief and Development on Amhara (ORDA) - ORDA is an indigenous NGO established in 1984 in response to the severe drought and environmental degradation in Amhara. ORDA's rehabilitation and development work has very little extension service *per se*. It assumes that agricultural extension is embedded within development programs. Indeed, an examination of its interventions shows that there is a lot of extension (technology transfer) in what ORDA does.

[15] For an elaborate explanation of innovations from pastoral perspectives see Scoones and Adwera (2009).

Figure 1: Participatory and market oriented pastoral extension service – a proposal from SNNPR



For example, in crop production, ORDA promoted seed multiplication, high value crop production, highland and lowland fruit development, cassava production. In livestock, poultry production, livestock restocking, apiculture, dairy development, forage development and animal health. ORDA also implemented income generating activities such as off-farm activities, credit and saving, integrated watershed management, soil and water conservation and agro-forestry. In capacity building, the major interventions are experience sharing within and outside woreda/region, introduction and demonstration of new technologies and organising beneficiaries into clusters, cooperatives and groups.

Case 3: Improving Productivity and Market Access (IPMS) - The project was initiated in response to the limited progress in improving livelihoods of smallholder farmers and pastoralists despite the numerous technologies which have been developed by the

international, national and sub-regional research organizations. It is financed by the Canadian International Development Agency (CIDA) and implemented by the International Livestock Research Institute (ILRI).

The project goal is to contribute to improved agricultural productivity and production through market-oriented agricultural development, as a means for achieving improved and sustainable livelihoods for the rural population. The purpose is to strengthen the effectiveness of the Government's effort to transform agriculture and rural development in Ethiopia.

Figure 2

IPMS Knowledge centers in use in Dale Woreda

The project covers 10 woredas in Amhara, Oromiya, SNNPR and Tigray and has four key components:

- Knowledge management
- Innovation capacity development
- Participatory marketable commodity development
- Research
- Gender, HIV/AIDS and environmental considerations are mainstreamed in each of these components.

Practical Knowledge Delivery at Gane FTC – IPMS

As part of the knowledge management component, the project launched the Ethiopian Agricultural Portal (www.moard.gov.et) where important agricultural information can be accessed. At wereda level, knowledge centers are established within the Woreda Office of Agriculture & Rural Development compound where it is equipped with computers, TV and DVD player, library, documentary films/CDs, and access to internet. The knowledge centre also hosts seminars and trainings. FTCs are also strengthened by providing computers and other audiovisual equipment. Non-IT methods such as study tours, field days, local technology exhibitions and seminars are also used.

The project outputs and outcomes refer to pastoralists but very little has been implemented in pastoral areas. To begin with, none of the principal pastoral regions (Afar and Somali) have been included. In Oromiya Meiso, an agro-pastoral woreda, is included and the primary commodities/technologies addressed are onion, fattening of large and small ruminants), and dairy.

Case 4: Pastoral Community Development Project (PCDP) - PCDP is a 15 year project co-financed by the International Fund for Agricultural Development, the World Bank and the Government of Ethiopia. It is implemented in 57 woredas of the Afar, Oromiya, Somali and Southern regions of Ethiopia covering over 600,000 rural households living in the aridCc and semi-arid lowlands of Ethiopia. They represent 25 per cent of the total pastoral population.

The objectives of the project are to strengthen the resilience of pastoral communities to external shocks and improve their livelihoods through increased access to basic social services. How is PCDP responding to the need for pastoral extension?

PCDP's starting point is that pastoral or livestock development projects of the previous regimes failed because of inappropriate definition of pastoral problems; absence of appropriate institutional framework; and the failure to recognise the economic and physical characteristics of pastoral areas. The PCDP pastoral extension model is given in Box 4 (Hailu, 2010).

Box 4: PCDP' Pastoral Extension Model

PCDP uses Mobile Support Team (MST) as a vehicle for pastoral extension provision. It has 16 MST stations (6 Somali, 4 Afar, 4 Oromiya and 2 SNNPR) established to facilitate and deliver technical support to the Woreda and pastoral communities.

One MST for 3-4 weredas - Each MST has a Team Leader, Gender and Poverty Alleviation Officer, Communication and Facilitation Officer, Procurement Officer, & Secretary Cashier.

Each MST equipped with a vehicle, administrative guideline, camping equipment, generator, communication (Radio/telephone); project specific MIS program and website.

PCDP extension principles:

- Community-driven-development (CDD)
- Sustainable Livelihood Framework (SLF)
- Participatory-Learning-in-Action (PLA)
- Participatory Communication, Monitoring and Evaluation
- Livelihood and risk management as entry point
- Not be formal instructions but facilitation (regions facilitated to develop packages)
- Focus on livelihood diversity
- Build up existing IK and community best practices
- Pilot and draw lessons
- Be responsive to pastoral needs
- Ensure social acceptance and community ownership and mobilization
- An integrated and holistic approach that focuses on people, livestock and natural environment.
- Strengthen the self-management capacities of indigenous institutions giving them control of decisions and resources
- Facilitating the community to develop a shared vision for its development
- Identifying the necessary knowledge, capacities and other resources that will be necessary to achieve the vision
- Establish objectives and develop Community Action Plans (CAPs) with the target community
- The ability to mobilize the community;
- The ability to rank priorities and strategies that contribute to achieving the common vision
- Put in place an institutional framework that responds to the physical, socio-economic setup of pastoral areas
- Rely on the existing capital (human, social, natural, physical, financial),
- Follow group-based extension approach
- Have entry points sensitive to gender and social capital
- Use mobile extension team unlike DA/farmer ratio of the highlands
- Deploy versatile subject matter specialist work in a team
- Adopt community based planning with clearly defined exit strategy.

4.2 Lessons from International Experience

The review of international experience showed that there are various approaches in both developed and developing countries but there is no single ideal model for adaptation or adoption. From the developed countries, Spain has protected the rights of pastoralists by law (Act 3/95 of 23 March on Cattle Trails Act). According to this law, cattle trails are public assets. They may be used by other compatible and complimentary activities (priority given to cattle movement) that respect principles of sustainable development and respect for the environment, scenery and natural and cultural heritage. Through this and other provisions, Spain has been able to modernize pastoral livelihoods without replacing it by other livelihoods.

According to Jonathan Davies[16] (personal communication), worldwide there are many specialised pastoralist extension services. In addition to Spain mentioned above, Switzerland, France, the UK, Australia and the USA have such systems. There were also specialised services in the former Soviet Union and some of the former members of the Union (e.g. Kazakhstan and Mongolia) still have functional services. China and some of the South American countries also have pastoral extension services (e.g. Peru).

The review of extension systems in developing countries showed that instead of trying to identify the "best fit" extension model for a particular country, the reality is that a pluralism of models is used in most countries in Asia and Africa. Table 8 is a summary of extension models in selected SSA Countries including Ethiopia.

[16] Regional Drylands Coordinator, Eastern and Southern Africa IUCN, the International Union for Conservation of Nature Nairobi, Kenya.

Table 8: Summary of extension models in SSA

Country	Extension approach/model
Angola	Rural Development and Extension Programme, FFS
Benin	Participatory management approach; decentralized model; FFS
Burkina Faso	FFS
Cameroon	National Agricultural Extension, FFS and Research Program Support Project
Ethiopia	Model based on SG-2000 approach: Participatory Demonstration and Training Extension System (PADETES); FFS
Ghana	Unified Extension System (modified T&V); pluralistic with NGOs and private companies part of the national extension system; decentralized; FFS
Kenya	Pluralistic system including public, private, NGOs; FFS; stakeholder approach (NALEP): sector-wide, focal area, demand-driven, group based approach
Malawi	Pluralistic, demand-driven, decentralized; "one village one product;" FFS
Mali	Modified T&V; both private and parastatal services for cotton; FFS; SG-2000
Mozambique	Government-led pluralistic extension; FFS
Nigeria	FFS; participatory; SG-2000
Rwanda	Participative, pluralistic, specialized, bottom-up approach; FFS and pluralistic system; FFS
Tanzania	FFS; group-based approach; SG-2000; modified FSRE from Sokoine University of Agriculture's Centre for Sustainable Rural Development; private extension; decentralized Participatory District Extension; pluralism
Uganda	Pluralistic; National Agricultural Advisory Services (NAADS) is demand-driven, client-oriented, and farmer-led; SG-2000; FFS
Zambia	Participatory Extension Approach; FFS

Source: Admassu, 2010

- As far as pastoral extension system is concerned, Ethiopia has very little to learn from the review of international experience. The examples from developing countries are not particularly inspiring. Many of them have been adapting the highland system to pastoral livelihoods; more or less what Ethiopia has been

doing and continues to do. Nevertheless, there are some key issues emerging from the review that are useful in developing strategies for pastoral/agro-pastoral extension system:

- Participation of pastoral people including pastoral associations
- Appropriateness of extension service that is efficient, culturally sensitive and mobile.
- Supporting diversification of pastoral livelihoods;
- Equitable access to markets, domestic and international, for the full range of goods and services produced by pastoralists;
- Technical innovation to bolster the rangelands management capacities of pastoralists, which build on the adaptive capacities of pastoralists in the face of climate change;
- Conflict avoidance strategies
- Incentives to promote the social and economic security of pastoral communities, while respecting their knowledge systems and collaborating with customary pastoral institutions;
- Understanding the basic needs of pastoral women, the threats they face, their roles in pastoral societies and how these roles are changing. Women's empowerment should be at the core of extension intervention.
- Financial services and products that are tailored to the needs and resources of pastoralists.
- Creating innovative financing of extension services (e.g. the creation of a Trust Fund (Ghana) and Basket Funding (Tanzania); community-driven development funds from levies on export commodities.

Institutional pluralism: (i) involvement of NGOs with experience in pastoral extension service or at least working in pastoral areas; (ii) contracting-out of extension services to the private sector, (iii) public-private partnerships, and (iv) privatize advisory services.
Government should focus on defining standards of extension the non-state sectors should meet. This has been done for education and health and the government has been able to engage the private sector.

5. The Dilemma of Pastoral Extension

In Section 1.2 of this paper, definitions of extension were presented. Some were too narrowly focused on technology transfer. Some were too broad to include a range of

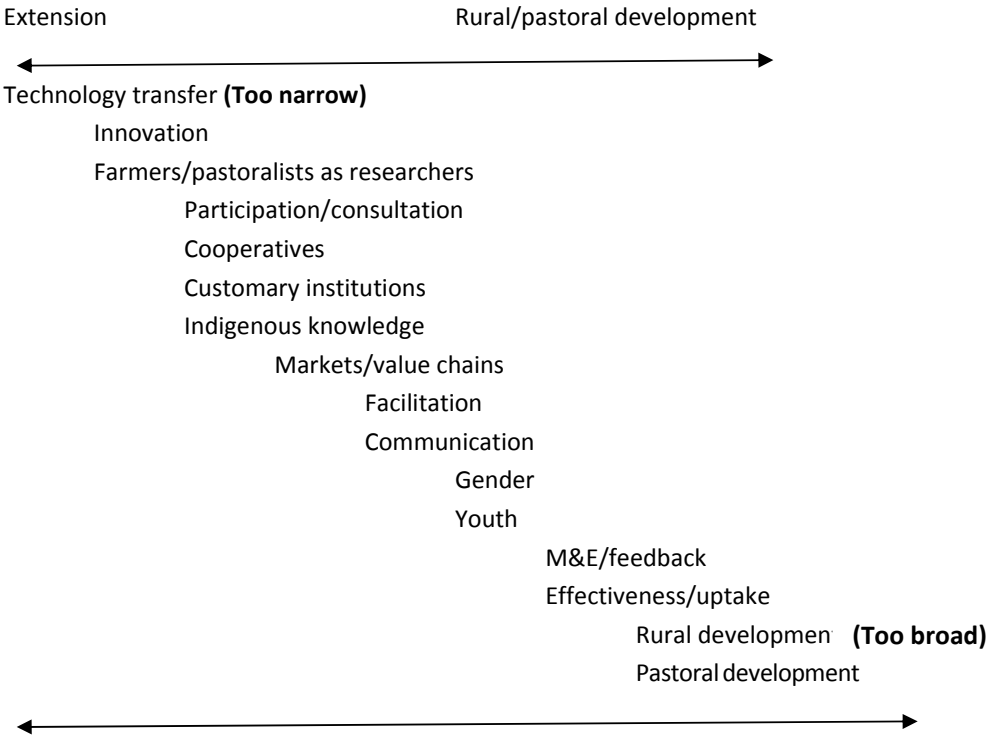
rural development activities. Although an optimum scope is difficult to establish, it is clear from the national and regional consultations that extension cannot be as narrow as simply delivering the message and also that extension should not end up doing everything – replacing rural/pastoral development. Getting the balance right is critical for defining the role of DAs and measuring their effectiveness.

Figure 3 shows the range of activities that DAs may be required to perform along the continuum of extension and rural/pastoral development. As far as development practitioners are concerned, the bottom line is DAs must be set free from activities that bring them into conflict with farmers/pastoralists – most notably credit collection, food aid distribution, and political activities. There is some evidence that policy makers also want DAs to focus on extension and extension alone.

There are a number of emerging trends in extension design and delivery as documented in Scoones and Thompson (2009). First, the new extension paradigm brings researchers, extension workers and farmers closer than ever before – more than the 'linkage' rhetoric that dominated the discourse so far. According to Mele (in Scoones and Thompson, 2009) research has to justify its relevance in reducing poverty in a sustainable way. Uptakes and impacts of research results have become more important than outputs (technologies and methodologies) and consequently researchers have to think through from the design of the research not at the end when it turns out that the technology is less relevant to the conditions on the ground.

Second, farmers and pastoralists need fresh ideas and should be presented with underlying scientific principles rather than ready-made technologies. This shift was proposed in the 1980s but little attention has been given to it principally for lack of willingness or attitude not for lack of technologies. Of course the opportunities are far greater today than in the 1980s. Creative communication approaches play more important role than the hardware to disseminate ideas that farmers and pastoralists need to improve productivity.

Figure 3: Range of DA activities: actual and potential



Third, others argue (e.g. Richards, 2009) that building farmer knowledge networks could work better than diffusion of ideas and technologies by scientists. This empowers farmers and pastoralists as sources of knowledge rather than recipients of knowledge. In pastoral areas, traditional institutions could play a useful role in building such knowledge networks.

Fourth, it is widely recognized that (i) research and extension should be participatory and demand-driven. For example, extension training should be demand driven and that trainees should choose the area they wish to train and work; farmers should choose the technology they wish to adapt. However, many grassroots practitioners argue that the majority of Ethiopian farmers are not aware of the technology options to demand extension; they lack confidence and self-esteem to demand extension. Demand-driven extension is therefore pre-mature. This is equally true for pastoralists.

In summary, these are some of the dilemmas facing the extension system whether it is in the highlands or pastoral areas. They need to be part of the debate when designing pastoral extension system.

6. Conclusion and Recommendations

6.1 Conclusion

Pastoral areas have distinct characteristics that should be understood and appreciated before embarking on developing an extension system. These include dependence on livestock production and marketing; the harsh physical environments and the role of traditional institutions in pastoral livelihoods. Extension systems should aim to improve people's livelihoods and also make use of their indigenous knowledge and traditional networks for information and technology dissemination. This paper provided a definition of pastoral extension that captures these dimensions.

The extension system found in the pastoral/agro-pastoral areas is a copy of farming extension system. It is not surprising therefore that it had very little impact on the pastoral livelihoods. The government response to such a gap is found to be inadequate particularly at Federal level. It produced draft pastoral/agro-pastoral extension system twice in ten years without proper evaluation and impact assessment and documentation of lessons.

At regional level, the response looked better. The regions have used the opportunities presented by the BPR process to restructure and strengthen their extension departments. Oromiya has made clear distinction between livestock and pastoral extension. However, the overall strategic direction remains dominated by public sector and the region is far from adopting instructional pluralism.

Unfortunately, there is very little Ethiopia could learn from international experience particularly form developing countries. Most of them have been doing almost what Ethiopia has been doing – adapting or directly implementing the highland model of extension in pastoral areas. Therefore, Ethiopia has considerable opportunity to design appropriate pastoral extension system. This paper has provided some food for thought towards this goal including some of the dilemmas extension designers might face.

5.2 Recommendations (food for thought)

The development of pastoral extension strategy/system must start from an understanding of the main characteristics of pastoral societies.

Government and non-government bodies providing extension service in pastoral areas should sensitize their extension staff at all levels on the proposed definition of pastoral extension. The government should use this as a basis for developing a standard for extension that partners should meet in the same way it defined standards for education and health.

There are a number of policy statements that indicate the importance of pastoral extension service that is based on indigenous knowledge. The strategy for operationalizing these intentions should be designed and implemented. To this end, the government should set up an advisory taskforce made up of (i) government (MoA, MoFA); (ii) NGOs/CSOs including PFE and projects such as the IPMS and PCDP; and (iii) knowledgeable individuals from the past and present systems.

Regions should continue innovating extensions services that are most relevant to their circumstances. The Federal Government should listen to these diverse experiences and use them as input to design pastoral extension strategy that is owned by regions.

Despite critics of the Ethiopian extension system that it is public sector dominated, non-state actors play important roles. The government should open up to these actors and adopt institutional pluralism as the guiding principle. Their experience should be evaluated and scaled up when found efficient, relevant and cost effective.
Cooperatives should be given special training on cooperative extension so they can be part of the institutional pluralism paradigm.

Public supply of inputs and technology has often been criticized in terms of quality, timeliness, and distribution. The engagement of cooperatives and private sector should address this ineffectiveness of supply side of extension.

Continued awareness and education of pastoralists should also address the ineffectiveness of the demand side of extension. There are lessons from other projects that demonstrate that farmers and pastoralists can demand inputs and technology if

they are suitably packages and designed. Community animal health workers are the case in point.

Strengthen Pastoral DA training by incorporating among others, (i) two-way communication and facilitation skills, (ii) monitoring and feedback skills, and (iii) gender awareness. Encourage DAs to pursue higher education with their own resources or from government and non-government sources. The current ban by the Amhara Regional State on DAs pursuing further education should be lifted.

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