

Participation in Extension Program Planning for an Improvement of Smallholders' Livelihoods in the MENA Region

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Abstract

Farming systems all over the MENA (Middle East and North Africa) region are formed by “resource-poor” smallholdings. These are often subsistence-oriented family farms with limited land availability, few capital (including animals), and limited access to inputs. Farmers usually are not well-educated or even illiterate.

Despite their importance for the region and an urgent need for system development, these farmers are often neglected - particularly by extension. Even if extension programs exist, they all too often do neither cover the knowledge demand of smallholders nor do they fit to their learning abilities. In other words: extension curricula are inappropriately designed with respect to training content and methodology. Reasons might lie in a centralization of planning processes, and a lack of communication between extension staff, program planners, and their target groups. However, we assume that there is a crucial need to increase smallholder farmers' participation in agricultural extension program planning.

This paper aims at developing some general strategies to improve participation in extension programmes considering the specific circumstances and resources-availability in the region. Part of this is an analytical framework of the possible effects of participation in extension on livelihood of smallholder farmers. The latter might be useful for valuation of specific cases, and thus for integration of situational analysis into regular programming. Insofar the paper serves two purposes. It provides the basis for an empirical analysis and in the long for institutionalisation of participatory curricula development in the extension systems.

1. Introduction

All over the MENA (Middle East and North Africa) region, extension is regularly implemented in form of governmental extension. It is seen as an important development factor, but often both, farmers and extension personnel themselves express dissatisfaction with the quality and frequency of their interactions. Services provided by the governmental agricultural extension have no significant influence mainly because they are not directly related to the needs of farmers (Al Shafi'i, 1996). A reorientation of the extension programs is necessary to improve the congruence of technical messages and communication strategies (Saito and Spurling, 1992).

This paper aims at developing some general strategies to improve participation in extension programmes considering the specific circumstances and resources-availability in the region. This includes an analytical framework of the possible effects of participation in extension on the livelihood of smallholder farmers. The paper firstly discusses, on a more general level, possible effects of extension on changing livelihood strategies of smallholders, with the extension system in Egypt serving as a case. For this purpose, the Sustainable Livelihoods Framework has been adapted into an analytical framework. The chapter following analyses the role of participation in extension processes, with a focus on programming, i.e., the planning and re-planning of extension programmes. It then identifies factors which influence participation. We assume that communication plays an important role, and thus have a closer look on communication factors. Finally, we conclude on some general strategies to extension programming. Methodologically the paper is based on a literature review and own experiences of one of the authors (Hassan) in the Egypt extension system.

2. Extension for sustainable livelihood of smallholder farmers in the MENA Region

Smallholder farmers' livelihood

Box: Typical farmer in Egypt (relative of Nagwa Hassan)

He is 54 years old, married. Both he and his wife are illiterate. They live in an extended family and have two sons and a daughter. The sons help their father in field work, and the daughter helps her mother in housework. They own 0.84 ha and rent another 0.93 ha. They have a cow, a buffalo, a donkey, and poultry (hens, duck and goose). Their house has only few pieces of furniture. The only source of income is agriculture. He plants wheat, rice, maize, tomatoes, eggplant, and sometimes onions. His wife helps him to cultivate and harvest the crops. She also bears the domestic and household work and is responsible for milk production and selling of poultry. He suffers from anaemia and digestive system problems. They do not have any professional communication network and communication tool such as internet or fax and thus depend on relatives as a social net. They get own seeds from the last season or as subsidy from the agricultural office; fertilizers they must buy from traders or the agricultural office, and pesticides only from traders, who must be paid latest after the harvest season. He does not know a village extension worker and has never participated in any extension activity or training. He feels neglected and marginalised. He suffers from high prices of equipment, high costs for harvesting, and conflicts on irrigation water.

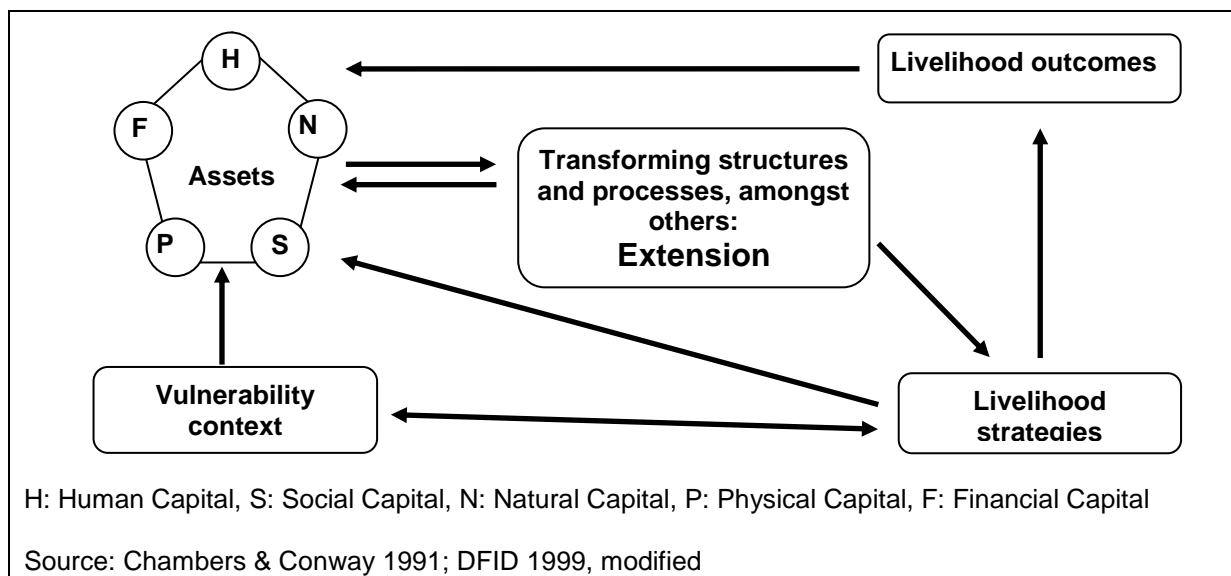
In the MENA region, the majority of farmers are still smallholders. Thereby it is quite difficult to characterize "smallholders" because they are by far no homogeneous group (Chamberlin, 2007). They have in common that they are "... a people who seek to best satisfy their priorities from a combination of activities. These activities compete for limited resources. Moreover, they face a set of local economic, institutional, natural, social, and cultural circumstances, which they cannot significantly influence. Scarcity dominates all aspects of their life" (Hoffmann et al., 2009). In other words: They are subsistence rather than market oriented, are short in resources such as land and capital and other assets; they have limited access to inputs and technology and to formal financial institutions for capital of any sort. Usually they have no insurance against risks and no capital reserve to balance losses and thus are suffering from relatively high degrees of vulnerability (World Bank, 2003, Dixon et al., 2004).

Farming is the principal source of income and the family provides the majority of labour (Berdegué and Fuentealba, 2011; Narayanan and Gulati, 2002). In the MENA region, smallholders often are tenants who own only small and scattered pieces of agricultural land and depend much on animal production (cf. box). Women play a key role. They are involved in field work and domestic and household work, breeding poultry, and they take care for livestock to get milk and its products. But often they do not have access to key development resources, services and opportunities (Nederlof et al., 2008). Sons regularly seek for off farm work in their village or in a nearby town or other even in other countries to improve their life. Daughters help in domestic and household work, breeding poultry etc.

The "means of making a living" in general (Adato and Dick, 2002) and more specifically the different capabilities, assets, and activities of (poor) people to secure the necessities of life is nowadays often described by the term livelihoods (Ellis 2000; Marisa C et al., 2013; Chambers and Conway, 1991, Scoones, 1998). Livelihoods are multidimensional and consist of various aspects of living such as the farm income, food security and nutrition as well as access to health services and education for rural children (Swanson and Rajalahti, 2010). The unit of "livelihood" is usually the farmer or the farm household. Poor household's livelihood usually is much diversified, including farm and non-farm activities (Adato and Dick, 2002; Yaro, 2006). Livelihoods of smallholder farmers in the MENA region

include thus on-farm activities such as cash crops, fruit, vegetables, tree crops, horticulture, livestock, poultry and farm wages; as well as off-farm activities such as non-farm wages, micro-enterprises, salary, transfers, remittances, pensions, credit and savings (Dixon et al., 2001).

Figure 1: The Sustainable Livelihoods Framework (simplified) and the role of extension



Small farmers' livelihoods are seen as sustainable if they can cope with and recover from stresses and shocks, maintain or enhance their capabilities and assets, while not undermining the natural resource base (Scoones, 1998). Moreover, they should contribute net benefits to other livelihoods at the local and global levels, in the short and long term and provide sustainable livelihood opportunities for the next generation (Krantz, 2001).

Table 1: Selection of items to measure smallholder farmers' livelihood

Factor	Variable
Farm assets	
Human capital	<ul style="list-style-type: none"> • Skills, attitudes, education, experience, labour force, health
Social capital	<ul style="list-style-type: none"> • Networks, groups, relationships (trust and support), access to institutions
Nature capital	<ul style="list-style-type: none"> • Land, drinking and irrigation water, livestock
Physical capital	<ul style="list-style-type: none"> • Water, energy, transport facilities, sanitation, equipment for production, communication tools
Financial capital	<ul style="list-style-type: none"> • Credit, remittances, pensions, wages, savings
Livelihood strategies	
• On farm	<ul style="list-style-type: none"> • Crop, vegetables and medical plant production; livestock and poultry
• Off-farm	<ul style="list-style-type: none"> • Regular and irregular (migratory) work
Livelihoods outcomes	
• Income	<ul style="list-style-type: none"> • Yield, numbers of livestock and poultry
• Use of nature resources	<ul style="list-style-type: none"> • Access to land and water, use of pesticides and chemical fertilizer
• Wellbeing	<ul style="list-style-type: none"> • Getting services of education, health, safety, security and entertainment
• Food security	<ul style="list-style-type: none"> • Access to enough food for health and an active life

Sources: adapted from DFID 1999, Chambers & Conway 1991

A well-known heuristic model helping to understand - and improve - livelihood "strategies" of rural people is the Sustainable Livelihoods framework (SLF, figure 1) of the Department for International Development of the United Kingdom (DFID). Livelihood strategies are combinations of activities that ensure the livelihood goals. They include production, investment and reproduction activities both on-

farm and off-farm. The ultimate goal is an increasing capability of farmers to maintain or improve household assets and to sustain their livelihood “outcomes”, namely reduce poverty and vulnerability, increase income and food security, and finally improve wellbeing of all household members (de Janvry and Sadoulet, 2000). Livelihood strategies depend on the assets of the household which themselves are strongly affected by the vulnerability context (weather extremes, climate change etc.). Table 1 gives an overview on - measurable - indicators which might be useful to describe and value the livelihood factors of smallholder farmers in the MENA region.

Extension as transformation structure and process

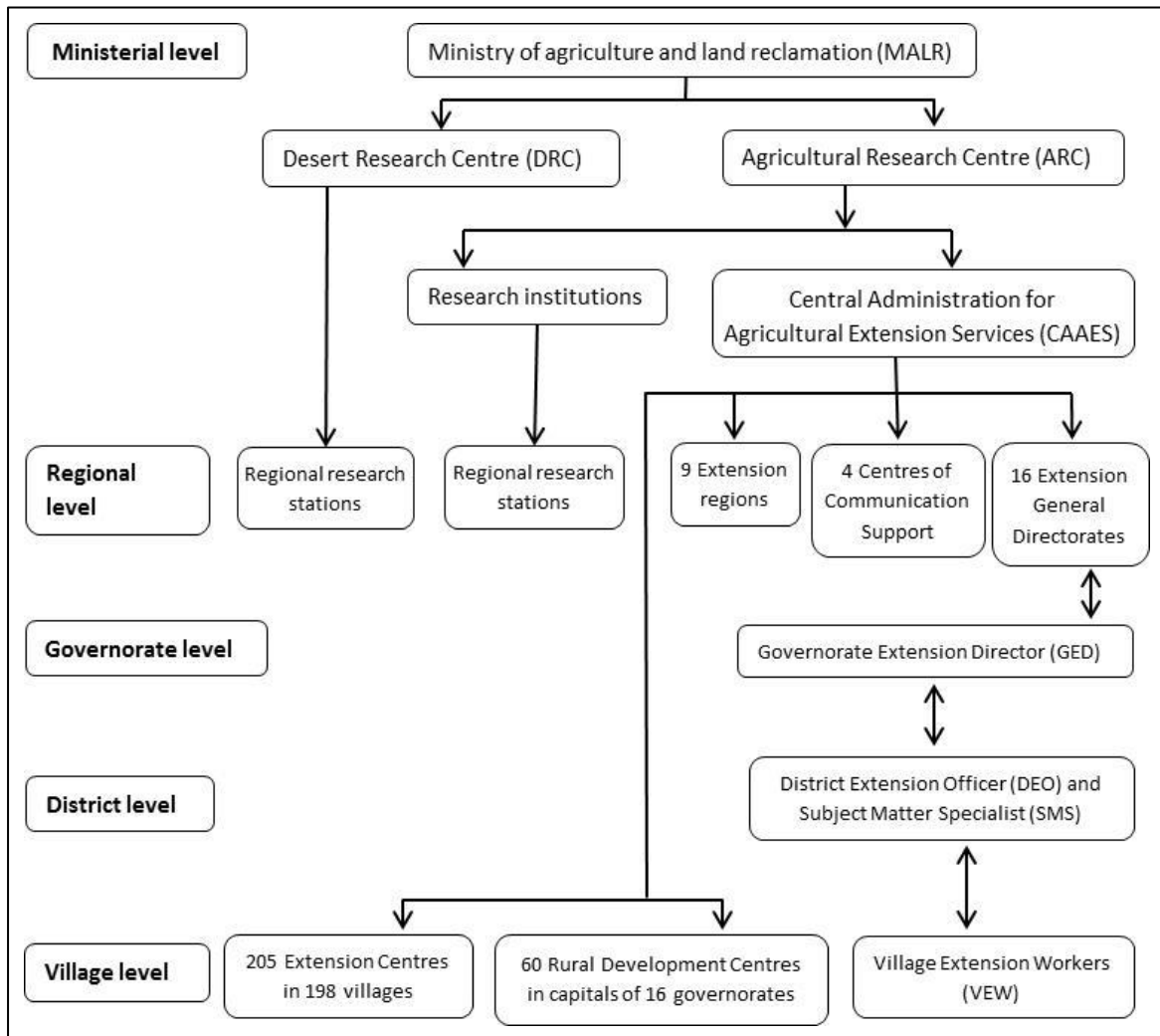
The SLF distinguishes between two mechanisms which “transform” assets into livelihood strategies and vice versa: structures and processes. Structures are “... *the institutions, organisations, policies and legislation that shape livelihoods. ... They operate at all levels, from the household to the international arena, and in all spheres, from the most private to the most public*” (DFID 1999). DFID describes them as the hardware. Processes in contrast are the software: “*They determine the way in which structures – and individuals – operate and interact*” (ibid.). Processes are multidimensional, overlapping, and often bearing conflicts.

Extension is both, part of the transformation structures and the processes (figure 1). On the one hand, it is a set of governmental, non-governmental and private organisations (Anaeto et al., 2012) which form together with organisations from research and the users an agricultural knowledge system (Nagel, 1979). Communicative linkages and institutions are determining whether the system as a whole or the extension subsystem is working effectively and efficient (ibid.).

On the other hand there are manifold formal and non-formal processes of bilateral, group and mass communication, of knowledge and information exchange, and of supporting decision making (Leeuwis and Van den Ban, 2004; Tang, 2013). The main goal is to increase farmers’ capabilities to solve problems, i.e., to be able to cope with stress and shocks, to respond to adverse changes in conditions, to gain access to and to use services and information sources (Chambers and Conway, 1991). In other words: to help farmers to sustain their livelihoods. The focus for MENA’s small farm households, especially the rural poor, still is to increase farm income (Swanson and Rajalahti, 2010) which crucially depends on maintaining or increasing crop yields and livestock production (FAO, 2005). The challenge from a macro perspective is to build capacities to improve the current livelihoods of the poor with respect to their circumstances and to a sustainable use of resources, thus reducing their vulnerabilities (McNamara, 2003).

Extension systems in the MENA region are regularly ministry-based approaches. Only in few countries such as Jordan, Lebanon, Syria, United Arab Emirates and Yemen, the private sector, NGOs, and farmers associations exist (FAO, 2005). The Egypt System as shown in figure 2 is a good example. Agricultural extension there is a government-operated, ministry-based and thus strongly hierarchic system (Rivera et al., 1997). All extension operates under the Central Administration for Agricultural Extension Services (CAAES) which only recently became a subsidiary of the central Agricultural Research Centre (ARC). The main objectives of CAAES are to increase the production of strategic crops, to improve linkages between extension and research, and to further develop the extension approach through monitoring and evaluation (M&E). Both, efficiency and effectiveness of the whole knowledge system are seen weak. Linkages with research are poorly institutionalised (Shalaby et al., 2011; Zahran, 2003) and thus extension’s contribution to developing research plans is neglectable with the consequence of a relative low user orientation in research (FAO, 2005; Shalaby and Mikhael, 2014).

Figure 2: Organisation structure of research and extension in Egypt



Source: Adapted from (McDonough et al., 2015)

Females are largely underrepresented in the public extension institutions. The percentage of extension workers with university degrees is relatively low and all extension staff on the lower levels is poorly educated. Particularly the village extension workers (VEWs) have few technical skills and knowledge. A majority of them have a secondary-level education. Furthermore, their work condition regularly is uncomfortable, amongst others due to a lack of transportation facilities which hinder them to establish regular contacts with farmers and interaction with higher levels of the extension hierarchies (Abdelhakam, 2005; Shalaby et al., 2011).

3. Participation in extension programming

In MENA as in many other developing countries the main means of extension are personal advice and short to medium term trainings. We have to distinguish between the extension programs and practical vocational educational measures under these programs. Programs set the framework for concrete activities of extension. Advisory and other educational measures such as trainings are organised under this programs. Therefore, curriculum setting of training is always strongly influenced by the programmes.

Ideally the programs should serve as organisational base and, even more important, strategic plan for extension work. As an organisational basis they help the agents to achieve the goals of extension (Harder, 2009) since the program provides a robust basis for extension activities which are planned and time scheduled. They also create a basis for anticipating what resources will be needed (Oakley and Garforth, 1985). Human resources development is one of the utmost important topics, including trainings, performance assessments and supervision of extension agents (ibid.). As strategic planning instrument they should systematically identify and assess the needs of the extension clientele and, following, determine objectives and guidelines for extension work. It is quite obvious that they should be oriented towards livelihood outcomes, and that they should consider all dimensions including ecological goals (McCaslin and Tibeziinda, 1997). The term “programming” here is used for all planning activities for the programmes concerning the strategic planning as well as the organisational settings. Strategic plans assess the needs through situational analysis and set priorities for the extension and training activities including the framework curricula development of vocational education measures. On organisational level the tasks are developing management plans, marketing and recruiting (Gibson, 2001; McCaslin and Tibeziinda, 1997).

But even if extension programs exist, they all too often do neither cover the knowledge demand of smallholders nor do they fit to their learning abilities. In other words: training curricula are inappropriately designed with respect to content and methodology. There seems to be neither established processes nor approved instruments which allow assessing the knowledge demand and defining the training need in a way that is suitable for the existing extension systems. This often leads to disregard of the real needs of the target groups and particularly to ignorance of the voice of the poorest farmers (Nagel et al., 1992; Akinngbe and Ajayi, 2010) and in consequence to an inadequate flow of knowledge and information to and from farmers. Curricula of trainings are often poorly defined, without consideration of the specific situation, and without paying attention to the quality of the learning and decision making process (Hoffmann et al. 2009).

Much has been written on participation, and meanwhile there is somehow a consensus that participation is a *conditio sine qua non* to improve both, effectiveness and efficiency of development approaches, and extension programming is definitely such an approach. Participation in agricultural extension is as well a philosophy and an instrument of development (Nagel et al., 1992). As a paradigm, it means a general orientation towards the end users which is expressed by the idea of “farmers first” (Chambers & Conway, 1991). As such, it is “... *an objective in itself to see the success and empowerment of individuals and communities in terms of acquiring skills, knowledge and experience, leading to greater self-reliance*” (Anandajayasekaram et al., 2008). As a process, participation refers to the whole extension cycle of situation analysis, planning and implementation, and most importantly the decision making of a program namely the setting of its objectives and its evaluation. The situation analysis is insofar important as here the need is (or should be) assessed in a systematic way. Information on farmers’ situation is to be collected aiming at an understanding of their problems from their perspectives, of their priorities, their livelihoods strategies and their resource constraints (Apantaku, 2006). Such information helps to identify the real need for extension and training, built or adjust extension programmes. Participation in the evaluation process helps to identify strengths and weaknesses and re-adjust the programs.

In MENA, however, extension systems are strongly top-down organised. Centralization means always that programming is operationalised at higher levels of the hierarchy and carried out by well-educated staff. Participation of the target groups is not foreseen. As there is little experience with participation in programming and as involvement of people in rural areas demands resources, the question arises how target groups realistically can be involved? There exist several levels of participation: more passive participation through information seeking and consultations, and more active participation by collaboration or co-action. The highest level is achieved when processes are self-driven by actors (Pretty, 1995). However, we think that these forms are rather a continuum than clearly defined levels. What is obvious is that the “higher” the level of participation is and the more active the target groups

are the more resources are needed for direct communication, process moderation etc. As resources are limited, it may be that „*full Participation is not always feasible or desirable*“ (Kanji and Greenwood, 2001) and that for the situation in MENA even passive forms of participation might be better than non-involvement. The question is on priorities: Who can and should participate, how, and in which phase(s) of the program?

Participation is strongly linked with all kind of communication. It is widely known that the utmost constraint to participation thus is a general lack of communication and interaction between and among extension workers and farmers. With respect to Berlo's (1960) fundamental model of interpersonal communication, the most important factors are with the sender and receiver, the message itself and the communication channels. For the relationship between farmers and extension staff, particularly decision-makers in MENA, we think communication factors as shown in table 2 play an important role.

Table 2: Overview on factors influencing communication between farmers and extensionists, and selected indicators for the specific situation in MENA region

Factor	Indicator
Education level	<ul style="list-style-type: none"> • Years in educational system • Certificates
Attitudes	<ul style="list-style-type: none"> • Trust and respect towards smallholders / towards extensionist
Social network	<ul style="list-style-type: none"> • Membership in organisations • Personal relationships with key persons of community / decision-makers
Health	<ul style="list-style-type: none"> • Status, diseases
Message	<ul style="list-style-type: none"> • Does the content meet the needs? • Sources of agricultural information and advice • Access to agricultural information
Channel	<ul style="list-style-type: none"> • Access to agricultural information • Communication tools (Phone, FAX, radio, TV, internet etc.) • Understandability of message
Intensity	<ul style="list-style-type: none"> • Persons known or unknown • Quality and quantity of contacts • Persistence / change of clients
Gender	<ul style="list-style-type: none"> • Number and type of work of women • Women's' access to extension services
Experience	<ul style="list-style-type: none"> • Work years in extension / as farmer • Attendance in extension or training activities
Time constraints	<ul style="list-style-type: none"> • Farming activities • Non-farming activities • Extension activities
Sources: Berlo, 1960; DFID, 1999; Anandajayasekeram et al., 2008; Teimouri et al., 2014; Chamberlin, 2007; Berdegué and Fuentealba, 2011; Narayanan and Gulati, 2002	

Regarding the actors, in principle all participants (rural people, extension workers, managers, and researchers) should be involved but particularly those who know best about the situation on site: the smallholders and the village extension workers (VEWs) who often are farmers themselves. Farmers are the end users of extension programs and finally decide whether programs are sufficient. In reality, only a small minority of smallholder farmers have access to training (Arous et al., 2013; Akinnagbe and Ajayi, 2010). This is particularly the case for rural women and youth. Smallholder participation in strategy development virtually does not exist. If farmers are involved, these are usually prosper and wealthier farmers or village leaders who are not necessarily familiar with the situation of smallholders. Due to the established top-down planning processes which do not foresee participation in decision-

making, farmers are often not even asked about their perspectives. Furthermore, administrative procedures often do not meet the field requirements and realities (Gikunda and Mutegi, 2015). At farmers' and VEW's site factors influencing participation are amongst others (Teimouri et al., 2014; Chamberlin, 2007; Berdegué and Fuentealba, 2011; Narayanan and Gulati, 2002):

- Education level: Most farmers and VEWs are less educated or even illiterate. They can not even express their interests or perspectives and feel uncomfortable in relation to (higher) extension staff;
- Health conditions: Anaemia and malnutrition are widely spread amongst poor people;
- Assets: Poor farmers do not even have access to extension services and new information. If they can not pay extension, they do not participate in programs, thus they do not demand anything from extensionists;
- Time constraints: Many poor people spend long time in search for off-farm work. VEWs have many tasks other than agricultural extension activities (often they are farmers, too);
- Qualification for participation: Neither farmers nor VEWs are trained in participation processes as the focus is on technology transfer;

4. Some general strategies to improve participation in extension programming

It is a bit like a treadmill: because smallholders cannot afford services such as extension they much depend on their neighbours who also belong to the poor, they do not have access to innovative knowledge and information and techniques, and in consequence remain poor.

Extension programs, the frameworks for practical advisory work, play in our opinion a crucial role as a framework and orientation for extension and training activities on site. The main reasons for often inefficient programs in MENA lie in a centralization of planning processes and a lack of communication between extension staff, program planners, and their target groups (Zahran, 2003, McDonough et al., 2015). We assume that, in order to meet the needs of the clients, there is a crucial necessity to increase participation of those who know best about the specific situation in designing and re-designing the programs: the farmers, and the village extension workers (VEWs). McDonough et al. (2015) for example found positive influences on the performance, production and perception of farmers and VEW after they were involved in a project in West Noubaria, Egypt.

Due to poor resources, time constraints, social hierarchies in combination with low education levels of farmers and VEWs – which are the main constraints as reported by Shalaby et al. (2011) -, these will not actively demand for changes in the programs. Thus it is up to the extension decision makers to involve smallholders. They have to come to the rural areas to analyse the situation and try to involve smallholders as active as possible - be it through searching for information, giving incentives etc. It might be trivial, but just asking farmers about their need could be a beginning (Chambers and Conway, 1991; Oakley, 1991; Chambers, 1994).

It is also to mention that “participation in programming” needs qualification of those who participate, too. Farmers, and maybe also VEWs need to be qualified on how to analyse their production systems with respect to problems, potentials and opportunities, as well as how to identify their needs. VEWs should be trained on communication skills in general, and in extension planning, implementation and evaluation of extension (and training) activities in particular: *“For VEWs ... it would require substantial training in how to strengthen farmers’ capacity to assess their business and opportunities and make well planned decisions in farm management, rather than just provide technical advice”* (McDonough et al., 2015). This would also strengthen their position and built capacities to influence programming.

Programs should assess the needs of the clients i.e. the smallholder farmers in systematic way (van den Ban and Hawkins, 1996). Ongoing planning processes based on an institutionalised M&E System in which the users (Smallholder farmers and VEWs) are involved must be established within the

respective extension system. What then is missing is an assessment tool or a methodology for the (participatory) situation analysis which provides information on both, the knowledge need and training demand of specific target groups, and “need” on meta level – whom to involve how in programming. We assume that it hereby is important to analyse both, the livelihood situation of the smallholders as well as the communication situation between extension staff and their clients, in order to programming both, the extension and training contents, and the means of communication – including decisions on the levels and tools of participation in programming. The framework developed in this paper including factors and indicators with special emphasis on communication is seen a first step. It could be useful for valuation of specific cases, and thus for integration of such approaches of situational analysis into regular programming. Insofar the paper serves two purposes. It provides the basis for an empirical analysis and in the long run for institutionalisation of participatory curricula development in the extension systems.

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