

Food and Livelihood Security Lesson Learning Study Including Community Extension

Sudan Country Study Report



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Highlights

Key project impacts

- Despite challenging circumstances (conflict and regular drought) communities report that productivity of crops and animals has increased and that they now feel more resilient to drought than they were before the project started.
- Rural Community Extensionists have played an important role and are a valued resource in the community.

Keys factors contributing to project success

- Effective capacity building to communities to plan for and manage their own development activities.
- Establishment of Network organisations to support community based organisations and provide a channel for other external resources to reach poor and remote communities.
- An effective technology package (seeds, tools and terracing) which has proven successful in increasing area cultivated and yields of crops.
- Training of community extensionists in crop based agriculture and livestock to continue to provide support services to the community beyond the project.

Challenges / gaps

- The continued insecurity in the region has been a major challenge and has limited the opportunities for communities to really improve their production and livelihood security.
- The long term sustainability of the CBO Networks is still in question as more skills and secure resources are required for them to achieve real independence.

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Abbreviations

CBO	Community Based Organisation
FAO	Food and Agriculture Organisation of the United Nations
IDP	Internally Displaced Person
ITDG	Intermediate Technology development Group (former name of Practical Action)
NGO	Non Governmental Organisation
PTD	Participatory Technology Development
RWH	Rain Water Harvesting
UNDP	United Nations Development Programme
VDC	Village Development Committee
VEA	Village Extension Agent
WDC	Women's Development Committee

PART I: Food Security Projects Impact Study (Kath Pasteur)

1 Introduction and background to study

1.1 Practical Action approach to Food and Livelihood Security.

In 2008 the number of hungry in the world was estimated at 1 billion and the number who are undernourished reached 2 billion – equivalent to almost one in three of world population.¹ In half of the regions of the world the Millennium Development Goal to reduce hunger by half by 2015 is not expected to be achieved.² Yet, world food production has increased by 17 per cent over the past 40 years, growing faster than population.³ Increasing overall food supply is clearly not sufficient to eliminate hunger.

The majority of those who do not have enough food to eat are small-scale producers – farmers, livestock keepers, fishing communities, forest dwellers – often living in fragile or remote, rural areas. Their food production and incomes are insufficient to meet household needs; they may suffer hungry months when they are not getting enough to eat; and they are often unable to meet other basic needs such as health care and schooling. Their livelihoods tend to be undermined by events, such as extreme weather or commodity price fluctuations, and by longer-term trends, such as population growth, climate change and ongoing conflicts.

During 2007 a desk review was carried out of Practical Action's projects and programmes to address critical aspects of food and livelihood insecurity⁴. Whilst approaches had changed over the decades, it was possible to pull out interlinked areas of capacity strengthening which had helped build the self reliance and reduced the vulnerability of food insecure populations living in marginal areas. These are described below and examples of the activities they imply at different levels from micro to macro are laid out in Table 1.

1. **Access to appropriate skills and technologies** for more sustainable and diversified production, whether agricultural or non-agricultural or a mixture of the

¹ UN Department of Public Information (2008) Goal 1 Fact Sheet, September 2008.
<http://www.un.org/millenniumgoals/2008highlevel/pdf/newsroom/Goal%201%20FINAL.pdf>

² UN Statistical Division (2007) Millennium Development Goals: 2007 Progress Chart
http://millenniumindicators.un.org/unsd/mdg/MDG_Report_2007_Progress_Chart_en.pdf

³ Pretty, J et al (2006) Resource-Conserving Agriculture Increases Yields in Developing Countries Environmental Science and Technology Vol. 40, No. 4.

⁴ Pasteur, K (2008) Food Security Draft. Available at <http://portal-projects.itdg.org.uk/INT/IA15000177INT/WorkingDocuments/Food%20Security%20Draft%20Version%203.doc>

two. This is achieved through Participatory Technology Development (PTD) and influencing the wider environment for increased accessibility of appropriate technologies which benefit the poor.

2. **Empowerment of communities** to determine their own future as well as to access and influence institutions and decision making process. Building self reliance is achieved through valuing and respecting people’s livelihood choices and building on local skills, capacity and knowledge to strengthen those livelihoods.
3. **Strengthening access to, and have control over, natural resources** by farmers, livestock keepers, fisherfolk and the landless poor, including land, water, forests and genetic resources.
4. **Equitable access to food and labour markets** through strengthening production, food processing and human skills for sale in order to obtain some cash income.
5. **Reducing vulnerability to disasters, both short and long term, including climate change** through strengthening livelihoods, improved hazard analysis, hazard mitigation, disaster preparedness and planning, and adaptation to climate change.

Table: Practical Action Food and Livelihood Security Areas of Possible Activity

	Empowerment, participation, respect & rights	Access to technologies for sustainable production	Control over & sustainable management of natural resources	Equitable access to food and labour markets	Reducing Disaster Risk – short and long term (incl. CC)
Positioning national representatives and their priorities in INTERNATIONAL debates and processes	<ul style="list-style-type: none"> • Self reliance over food aid • Prioritisation of agriculture • Prioritising fragile, rural areas 	<ul style="list-style-type: none"> • Wider spectrum of approaches to agricultural extension • Self reliance over food aid • Prioritisation of agriculture • Prioritising fragile, rural areas 	<ul style="list-style-type: none"> • Rights to control resources • Environmental sustainability over short term production in agriculture • International Seed Treaty 	<ul style="list-style-type: none"> ▪ Reduction of food dumping 	<ul style="list-style-type: none"> ▪ Policies that reduce climate change ▪ Policies that help poor countries to adapt ▪ Promoting adoption of Hyogo framework
Using demonstration of effective approaches to influence NATIONAL strategies and	<ul style="list-style-type: none"> ▪ Mobilisation of local CBOs and national NGOs to influence national policy 	<ul style="list-style-type: none"> ▪ CBAH national policy influencing 	<ul style="list-style-type: none"> ▪ National policies for sustainable management of land, water, ag., and env.; pastoralist rights; conflict 	<ul style="list-style-type: none"> ▪ Local sourcing of food aid 	<ul style="list-style-type: none"> ▪ Integrated development and disaster/CC policy ▪ CC awareness raising

obligations			and peace building, etc		
Convening spaces for mediating policy implementation and maximising the use of available resources – MESO level institutions	<ul style="list-style-type: none"> • CBOs accessing resources and influencing local policy • Planning and accessing participatory budgets 	<ul style="list-style-type: none"> • Prioritising socially excluded, landless, marginalised in policy 	<ul style="list-style-type: none"> • Implementation of policies for sustainable management of land, water, ag, and env; pastoralist rights; conflict and peace building, etc 	<ul style="list-style-type: none"> ▪ Local sourcing of food aid 	<ul style="list-style-type: none"> ▪ Integrated development and disaster/CC policy ▪ CC awareness raising
Mobilising human and social capacities for LOCAL consensus building and development planning	<ul style="list-style-type: none"> • Training for Trans-formation • Visioning • Village Development Committees/ • Women's groups • Capacity building 	<ul style="list-style-type: none"> • PTD • Village/community extension agents • Bio-village / Rural Technology Centres • Plus all the technologies listed 	<ul style="list-style-type: none"> • CB approach in ag biodiversity conservation • Community based planning • PAPD/consensus building 	<ul style="list-style-type: none"> ▪ Producing excess for local sale ▪ Food processing for local sale ▪ Enhancing skills for labour market 	<ul style="list-style-type: none"> ▪ Disaster planning ▪ Disaster preparedness ▪ Community hazard (incl. CC) analysis ▪ Early Warning Systems ▪ CC awareness raising

Many of the activities in Practical Action's projects take place at the community level, however for sustainable and long term change at scale it is also necessary to work to bring about change at district, national and international levels. Work at district and national levels tends to involve influencing the practices and policies of other institutions, both non-governmental and governmental in support of those practices we have found successful. At an international level the aim is to influence donor approaches and international policies and processes in favour of practical approaches that we have found successful, as well as towards broader support for a policy framework known as Food Sovereignty – i.e. realising the 'right of farmers to define their own food, agriculture, livestock and fisheries systems' (see box below). This is achieved through strategic advocacy as an organisation or as a member of wider networks.

Box: Elements of the Food Sovereignty Policy Framework

- 1. Focuses on Food for People:** Food sovereignty puts the right to sufficient, healthy and culturally appropriate food for all, at the centre of food, agriculture, livestock and fisheries policies; and rejects the proposition that food is just another commodity or component for international agri-business.
- 2. Values Food Providers:** Food sovereignty values and supports the contributions, and respects the rights, of women and men, peasants and small scale family farmers, pastoralists, artisanal fisherfolk, forest dwellers, indigenous peoples and

agricultural and fisheries workers, including migrants, who cultivate, grow, harvest and process food.

3. **Localises Food Systems:** Food sovereignty puts providers and consumers at the centre of decision-making on food issues; protects food providers from the dumping of food and food aid in local markets; protects consumers from poor quality and unhealthy food, inappropriate food aid and food tainted with genetically modified organisms.
4. **Puts Control Locally:** Food sovereignty places control over territory, land, grazing, water, seeds, livestock and fish populations on local food providers and respects their rights. They can use and share them in socially and environmentally sustainable ways which conserve diversity.
5. **Builds Knowledge and Skills:** Food sovereignty builds on the skills and local knowledge of food providers and their local organisations that conserve, develop and manage localised food production and harvesting systems, developing appropriate research systems to support this and passing on this wisdom to future generations.
6. **Works with Nature:** Food sovereignty uses the contributions of nature in diverse, low external input agro-ecological production and harvesting methods that maximise the contribution of ecosystems and improve resilience and adaptation, especially in the face of climate change.

Source: *Synthesis Report, Nyéléni 2007 – Forum for Food Sovereignty*, Sélingué, Mali, 23 - 27 February 2007, www.nyeleni2007.org

1.2 Objectives of the International Study

In order to assess experience and impact in these five areas and at different levels, the Reducing Vulnerability Team has undertaken to review past work to learn lessons and contribute to improving future programmes. A first phase of reviewing project and programme documentation was carried out which resulted in the above framework. This led to the funding of a second phase of revisiting a number of key projects which were completed some years ago to assess gather evidence of success and learn further lessons. A key component of our food security work has been the training of community based extensionists. This has therefore been given priority for more detailed investigation through the lesson learning studies specifically looking at questions of sustainability, cost-effectiveness and adaptability of our approaches. Field based lesson learning studies were carried out in four countries: Bangladesh, Kenya, Peru and Sudan, covering both food and livelihood security and a detailed study on extension in three of those, and covering only extension in Peru.

2 Background on Food Security in Darfur

2.1 Food Security context in Darfur

North Darfur State, in the West of Sudan, has a population of 1.3 million people (see Annex 1 for location maps). The state is one of the poorest among Sudan's 26 states with over 90% of the population living below national poverty line. Eighty percent of the total population live in rural areas and depend on natural resources utilisation. The economy of the project area is based on traditional rain-fed cropping, which represents 85% of the household income integrated with cattle raising (15%) and petty trading (5%). Women provide over 80% of agricultural labour in addition to their domestic roles while heading over 30% of the households. Crops produced include staple crops (millet and sorghum) together with other cash crops (sesame and groundnuts) and vegetables (okra, tomato, watermelon) for sale and domestic use (source: H+ project proposal document).

Greater Darfur has long been neglected by its own national government, suffering from low levels of investment, as well as poor political representation compared to the central region. Particularly with respect to agriculture, the majority of investment has gone to high potential areas along the banks of the Nile. As a result the level of infrastructure (e.g. electricity, water supply, transport and communications), health and education are all extremely poor. Local level institutions are weak, having been undermined through the manipulation of ethnic divisions by central government (Young et al, 2005)

The context for achieving food security in Darfur is challenging. Average annual rainfall is as low as 100mm in some areas where Practical Action is working. The Greater Darfur region mainly consists of four main climatic zones. Firstly, the rich savannas in the south with an average rain fall between 400 mm to 800 mm per year; the rainy season extends between 4 to 5 months. Secondly, the poor savannah in the middle of the region, with an average annual rainfall that ranges between 200 to 400 mm and a rainy season ranging between 3 to 4 months. Thirdly, there is the arid zone which occupies the middle of northern parts of the region. This is where the Practical Action has been working in recent years. The rainfall in this zone is limited, with high fluctuations and ranges from 100 to 300 mm. The fourth zone is the desert zone and it is characterized by lack of rainfall and high temperatures during the summer.

Recurrent droughts have had devastating impacts on crop production resulting in low yields, e.g. during the sixties, in 1984 (resulting in a major famine), 1989, 1990, 1997

and 2001. The majority of producers in the region rely on rain-fed cultivation, the opportunities for irrigation being few.

Two soil types are predominant in the region: *goz* and *wadi*. The *goz* are stabilised sand dunes resulting from ancient weathering of the Nubian sand-stones. These soils have a low organic and nutrient content and are susceptible to erosion. Despite this, the *goz* are extensively cultivated primarily because they are easy to work by hand. Soil fertility is declining, caused by sand movement, deforestation, overgrazing, and poor soil and water management. More fertile *wadi* soils are available but their cultivation has been limited due to lack of experience, skills, tools and labour. Furthermore, unpredictable rainfall patterns mean that in some years *goz* soils can be more productive than the *wadis* (e.g. Dar El Salem during the 2000 season) hence it is ideal for farmers to cultivate a mix of both. However, as the potential for this *wadi* land is being realised a new challenge is the tendency for it to be controlled by the rich.

Access to agricultural services and inputs, including extension, seeds (especially early maturing and drought resistant) has traditionally been lacking, as has been the widespread availability of good quality and durable agricultural tools. Opportunities for marketing or small enterprise development are also poor due to the region's remoteness, poor transport, seasonal flooding, low prices, and taxation policies.

Processes of deforestation (due to overdependence on wood and charcoal as fuel) as well as low levels of ground water recharge increase labour demands particularly for women and children in collecting fuel and water. These activities also pose a high risk for women in the context of the current conflict as they can be vulnerable to abduction and rape. Over-demand for limited resources can lead to tribal conflict not necessarily associated with the broader political context.

- Labour constraints at times due to male migration.
- Poor access to cash in pre-cultivation period.
- Poor storage and lack of food processing lead to forced sales at low prices.
- Lack of local service support as government agricultural support is directed to areas of high potential
- Lack of local organisational structures capable of analysing and planning for development activities.

Livestock are very important both at the national level and within the region. Before oil was discovered livestock generated 20% of national foreign earnings (Young et al 2005).

2.2 Impacts of the conflict on the food security context

Young et al (2005) suggest that between 50 and 90% of livestock belonging to the non-Arab population in Darfur have been lost to government armed forces. This is eroding the backbone of the regional economy. Furthermore, total and partial closure of trade routes has led to increasing prices in basic commodities. Remittances from labour migration to Libya is also a significant input to the regional economy, but the conflict is disrupting people's ability to return or even send money back to their families (Young et al 2005).

Many development agencies such as Save the Children, Oxfam, and World Food Programme have been operating in the Region for a long time focusing amongst other areas, on food security. However when the conflict started all agencies in the region moved towards humanitarian assistance with the exception of Practical Action. This led to a stronger focus on those who were living in IDP (internally displaced persons) camps or in providing food relief, rather than investing in longer term food security needs for the wider population, affected by but not necessarily displaced by the conflict. Only in the last year have some of these agencies started to shift back towards longer term development interventions. Practical Action has focused work on the El Fasher area because it has been neglected by other NGOs who are working in the camps in more remote areas.

2.3 Practical Action Food Security Programming experience in Sudan / Darfur

Practical Action has been working in Darfur since 1987, starting in partnership with Oxfam providing technical assistance in developing donkey ploughs and water harvesting techniques in Kebkabiya. Practical Action continued promoting donkey drawn ploughs among farmers and providing support to the Kebkabiya Association until 1996. The LINKS project managed to produce and sell over 2,000 ploughs to farmers in over 10 village councils.

During the early years in Darfur Practical Action was principally collaborating with other agencies under their projects. However from 1998, Practical Action developed a broader portfolio of work both led by the agency and continuing to collaborate with others. The

following are principal projects that have address food security and community extension needs in the region.

- ***Linking Indigenous Knowledge in the Sudan (LINKS)***: With Oxfam. 1996-1998. Promotion of the donkey plough along with crop diversification, soil and water conservation, rainwater harvesting, building the plough manufacturing skills of blacksmiths and community empowerment in Kekabiya and Jebel Sei.
- ***Darfur Rural Livelihoods Programme (Darlive)*** DFID, 1998 to 2002. Built on lessons from the LINKS project working in the same geographical areas (Daressalam, Jebel Sei and Azagarfa). Promoted rainwater harvesting, agro-forestry and animal traction technologies; trained agricultural extensionists; built capacity in horticultural production and food processing; and invested in rural transport for improved market access
- ***Re-establishing food self-reliance among drought affected populations of Northern Darfur***. EC Food Security, 2002 – 2006. Scaling up of agricultural production technologies (RWH, plough, extension, etc), water transport and supply; storage, processing and marketing of agricultural produce; community organisation (VDCs, women's groups. Blacksmiths societies, etc). 10,000 households.
- ***Community-managed Animal Health Project*** SPANA (Society for the Projection of Animals Abroad), Dec 2004 – July 2005. Strengthening community based animal health services and improving health and nutrition of donkeys through fodder distribution
- ***Developing Pro-Poor Agricultural Markets in Northern Darfur*** EC Humanitarian Plus, June 2005 – May 2007. Building community organisations (VDCs), increasing agricultural production through access to improved technologies and extension skills and strengthening producers' access to new and existing market opportunities by developing their understanding of the market and establishing effective links with market intermediaries and buyers
- ***Improving health and welfare of children in North Darfur*** Kids for Kids, June 2007 – May 2010. Forming and training Village Development Committees to plan and implement their own development initiatives. Training community based animal health workers and establishing revolving drug funds. Restocking of goat herds under an animal lending system.

This study looks principally at the impacts of the EC Food Security Project Re-establishing food self-reliance among drought affected populations of Northern Darfur which ran between 2002 and 2006 (see box below for summary and annex 2 for the full project logframe). However, some of the communities involved in the EC Food Security project also benefitted from the other projects, either before, during or after the period of this project, and the paravets have also been trained under a range of projects.

<p>Goal: Reduced poverty and vulnerability to drought of poor food producer households in North Darfur</p> <p>Purpose: Poor women and men food producers in North Darfur able to re-establish and advance their capacities for self-reliance and mitigate recurrent drought through the sustainable and productive management of local resources</p> <p>Expected Results:</p> <ol style="list-style-type: none"> 1. Rural farm-producer organisations will be able to plan and manage development activities, mitigate the impacts of drought, and improve the representation of women and the poor in their decision-making 2. Poor small farmers will achieve higher food and cash crop outputs in both normal and drought years 3. Rural communities will gain greater access to potable water by developing locally financed and managed water management and delivery systems 4. Women will generate more income by increasing their capacity to store, process and market agricultural and non-food products
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3 Study Methodology

Data collection for the learning study on food security was combined with a more detailed study of community based village agricultural extensionists and paravets. The field research was conducted between early March and early April 2008 over a one month period. Prior to the field visit relevant food security project documentation was reviewed (proposals, evaluations, reviews and other publications).

The research tools used were as follows. Research tools are detailed in full in Annex 3.

Data collection tool	Areas covered
Household Food Security Questionnaire	Covering household profile; agriculture/production capacity building; community extension; household income and assets; coping with disasters; food security; community empowerment and a self assessment of the household situation.
Focus Group Discussions with men and women (separate discussions with women)	Focus Group Discussions covered a time line of general and project specific changes in the community; sustainability and replication of project benefits; community organisations and empowerment (including institutional mapping); women's

	participation; market access and project impacts.
Community Questionnaire	Covered questions of community statistics (population etc); other projects; availability of services (health, education; transport, etc)
Questionnaire for Community Extensionists	Covered extensionist profile; training; dropping out; coverage; technical aspects; inputs and supplies; remuneration / dedication; and sustainability / motivation.
Semi Structured Interview for Extensionists	Covering training; technical issues; clients; competition / collaboration; and motivation
Interviews with key informants at district and national level	Covering trends in agricultural development and food security, significance of the contribution of the Practical Action project to change and other issues relevant to the interviewee.

Household data was collected in four beneficiary villages and one control village. Within each of the villages the sample size was around 25 (the aim was 30 but this was limited by time constraints in the field), making a total of 99 beneficiary households and 24 control households. Villages were selected purposively based on the following criteria:

- Not directly affected by any current conflict
- Mix of longer term and shorter term support from Practical Action
- Mix of villages located near to and far from El Fasher.

Selected villages were as follows:

Village	Sample size	Characteristics
Azagarfa	23	Beneficiary since 1998; 35 km from El Fasher
Abudigis	27	Beneficiary since 2003; 27 km from El Fasher
Ghiriega	27	Beneficiary since 2002; 17km from El Fasher
Maba	22	Beneficiary since 2006; 45 km from El Fasher
Arari	24	Distance from El Fasher

Random sampling of households would have been the ideal but this was not possible given the lack of availability of a full population list. Households were identified for the survey by the Village Development Committee based on the criteria that there should be a mix of direct beneficiaries (those who actually received training directly) and indirect beneficiaries (those who were trained by other farmers or extensionists). It was also requested that there should be representatives from different income groups. Those surveyed were drawn from different communities within the cluster that makes up on

village (typically 5 or so communities make up one village and are members of a single VDC).

Data on community extensionists was collected by inviting extensionists to the Practical Action office in El Fasher. Out of a total of 36 VEAs and 140 paravets who were trained between 2002 and 2006 around 52 were sampled. Semi structured interviews were carried out with six individual extensionists and with two larger groups (VEAs and paravets).

3.1 Challenges

Random sampling of villages and households would have been the ideal but this was not possible given certain constraints. Most importantly was the geographical limitation resulting from the conflict situation. There was also a challenge of communicating to all communities to inform them of our arrival. Thus the availability of contact persons in El Fasher (i.e. the extensionist had already been called) or with mobile phone also influenced the selection of communities.

Selection of households was not possible by random sampling as a list of households in the selected communities was not available in advance.

Data collection was challenging due to language issues. There were difficulties associated with accurate translation of the questionnaires into Arabic and clarifying what was required of the research team when in the field.

4 Study Findings

As noted above, the number of responses for the control village sample for a large number of questions was not sufficient to be statistically reliable. They have therefore only been included in the sections below for the few aspects where there were sufficient responses.

4.1 Community institutional capacity building

Developing Community Based Organisations (CBOs) is the key strategy used in Darfur for helping people to help themselves. It is intended to complement the technology element as a mechanism for communities to prioritise development issues, resolve challenges, and access further resources into the future, beyond the support of Practical Action.

Practical Action encourages communities to form a Village Development Committee (VDC) or a Women’s Development Committee (WDC) as a starting point for their engagement in other development activities. This means that the activities can be planned and managed by the committee and that long term ownership is taken by the community. Each VDC has both a management committee of around 10-15 which focuses on decision making and an executive committee of around 30-40 for implementation, mobilisation and monitoring of activities. All are formally registered with the government, which is supportive of these structures. A monthly membership of 1 to 2 Sudanese pounds is charged for membership.

Members of the committees receive training in various aspects of management and operation necessary for successful operation. Each of these trainings lasts around 3 days and will be provided to all executive committee members. Community centres have also been constructed which provide a focal point for community meetings and other interactions. Educational posters and updated lists of community activities were on display in some of these community buildings illustrating their relevant use.

Standard trainings received by VDCs/WDCs

- Management of the CBO
- How to draft a constitutions
- Book keeping / record keeping
- Meeting management and reporting
- Project cycle management
- Proposal writing
- Needs assessment
- Strategic Planning
- Lobbying, advocacy and leadership*
- Monitoring and Evaluation*

*not provided to all groups

The formation of a VDC or WDA is the principal activity in Practical Action food security projects as it is through this structure that all other activities are introduced and managed.

Other institutional capacity building has included establishment of a Blacksmiths Association (see below for more details) with societies at the community level, and set up of committees for management of other initiatives such as the grain banks.

4.1.1 Outcomes

There are currently over 100 VDCs in the El Fasher District. Practical Action facilitated the establishment of around three quarters of these, but 23 were established as a result of communities’ own initiative. There are around 50 WDAs only 24 of which were established under PA projects. It was reported that most community members join the committees, and that membership is affordable. Those who do not join at first tend to

join once Practical Action starts implementing activities. It was not possible to judge whether membership would be sustained once project activities cease as Practical Action continues to work in all the communities visited.

Whilst Practical Action has no clearly defined exit strategy, hand over is progressing through several steps, e.g. ensuring that the committees are linked to and recognised by governmental and UN authorities; building capacity to raise funds and manage projects independently; building the capacity to facilitate the provision of services such as schools, clinics etc. using those funds.

The village of Azagarfa has been particularly successful. It received support from Practical Action over 10 years, but in the two years since they have been on their own they have managed to secure internal and external resources for a number of self-initiated activities: the establishment of a pharmacy; telephone service; a generator; satellite and TV; goat and donkey restocking for 80 families; human drug revolving fund; 2 classes in school got furniture. Funds for these activities came from other agencies (such as FAO and UNICEF) in some cases.

Those who participated in focus group discussions were happy with the functioning of the VDCs. However, it was noted that not all community members contribute to VDC activities. Communication of activities from the executive to all members of the village was sometimes noted as a weakness, reasons being as follows. Most villages consist of a cluster of 4 to 7 communities which can be some distance apart. It was found that the VDC did not always cover or benefit them all equally. The insecure situation makes it difficult to come together for gatherings of any kind as they can be a focus for incidents.

The participation of women in VDCs as reported in focus groups was variable. Where WDCs existed there was strong female participation and positive feedback.

As the number of VDCs and WDCs has increased Practical Action assisted in the establishment of Networks to coordinate these committees. Key aims of the Networks are to develop their own new projects and provide support and training to new committees as they form. The WDC Net was registered in 2004 and the VDC Net in 2006.

Every committee is represented by a member in the Network. These Networks are very important as the committees cannot get easy access to international agencies from the village level. The Networks act on behalf of all their member committees to develop projects and get funding for relevant activities. The new structure has also been more

effective during the conflict as external agency staff are less able to travel to the field. They can more effectively support communities via the Network, meeting with relevant committee members whilst they are in El Fasher.

At the time of the research the VDC Net reported having 9 projects including one recently funded by FAO for the sum of US\$300,000 for the blacksmith association to produce agricultural tools for free distribution in the area. The WDC Net reported having around 11,000 members and 8 funded projects, ranging from US\$5,000 to US\$210,000, addressing training in fuel efficient stoves, computer training, and goat restocking, amongst others. Practical Action still provides considerable support in the application of the networks for these projects, e.g. in terms of advice and in translation of documents, as member capacity is still lacking.

In terms of impacts of community institutions on individual members, these are principally felt through activities which are facilitated through the committees (impacts of which are detailed below). Members of focus group discussions reported stronger linkages with other communities. Some women who were members of the committee reported significant changes in their lives, particularly in terms of mobility and self confidence.

“The fact that we are all sitting here together is a result. Before the only organisation was cooperatives in the village for selling things. This is a totally different type of organisation. Now every month we are improving, not even every year but every month. Everyone feels that their thinking is different” Focus discussion, Azagarfa

“The VDC is very important for access to agriculture and livestock services”
Member of Ghiriega Focus Discussion

“Before the project women were not given membership of any committee. Now we are. Some of us have come from other villages in this cluster to attend this meeting. Before we never travelled to other villages, only to visit relatives. It gives me pride to meet people from outside and be representing me household without me husband. We never did anything like this before.” Women focus discussion, Azagarfa

4.1.2 Lessons and challenges

Community organisational capacity building has been a highly successful element of the food security work in Darfur.

One key challenge currently being faced by the Networks is the need for more training and paid up staff with sustainable long term resourcing (even for building etc.). Both VDC Net and WDC Net representatives expressed a need for further training before they

could stand alone. They also need a guaranteed stable income to ensure that they are able to pay for administration and services for their offices in between projects.

The degree of representation on village or women's development committees should be further explored, as some members of a focus group discussion reported not being consulted on issues and also rarely being invited for trainings organised by the Network.

4.2 Technologies for improved crop production

As noted in section 2.1 two soil types are available for cultivation in the region. The goz soils are traditionally less fertile but more widely cultivated due to lack of appropriate skills and tools. These are becoming heavily degraded though over-cultivation amongst other factors. The wadi (or clay) soils are more fertile but heavier and require tools and more labour. Practical Action works with farmers to improve the opportunities for cultivation of the more fertile wadi soils. Support was provided through training delivered either directly or through the Village Extension Agents, construction of physical structures such as dams and stores, and organisation support, e.g. in the management of stores and banks. These are detailed below.

- Earth dams and terraces

Wadis are essentially dry river beds. A chief problem with wadi cultivation, therefore, is that when the rains come, the water swiftly runs across the surface without infiltrating and much of the moisture simply continues “downstream”. Earth dams are constructed across the width of the wadi to stem the water flow and cause shallow flooding of up to 200 hectares depending on the length of the dam. Sluice gates and fixed spillways allow water to pass through if the flow is too heavy to reduce the danger of the dam being washed away. This intervention can ensure soil moisture for up to 6 months, and the Wadi soils are highly fertile compared to the Goz soils. As a result of dam construction combined with the plough technology described below, households can expand the area under cultivation and achieve higher harvests. In the evaluation of the EC project in 2006, it was found that as a result of the range of project interventions there was an average increase in area under cultivation of 16.5% and an average increase in harvest of 19%. However, where dams were also built (in 3 out of 12 communities), the area cultivated increased by 50% and the harvest increased by 53%.

Four dams have been constructed under three projects to date. Whilst farmers participate in the construction, a heavy investment is required to hire the necessary equipment. Although the intention was for the different activities, including dams, to serve as success models to be scaled up by communities – accessing support from government or other donors – this has been challenging given the situation in Darfur. Practical Action staff report that the government has committed considerable development funds to Darfur (\$600 Million over 3 years) and is also supportive of the kinds of technologies promoted by Practical Action, it is difficult for communities to

access these funds, and in Darfur it is virtually impossible for government to operate in the field given the insecurity. Hence, the numbers constructed tends to be limited, though the need is enormous.

“The biggest gap of this project is the failure to construct a water harvesting dam. When there is no natural flood on the wadi course, there is need for a dam to divert water.” Focus Discussion, Ghiriega

“Even with new techniques, the rainfall levels are extremely low. If the rainfall is below 150mm we get virtually nothing. Only a rainwater harvesting dam will tackle this problem” Focus discussion, Maba.

Terraces are a smaller version of earth dams. Square terraces have traditionally been constructed by farmers to capture and hold rainwater to stem runoff. Practical Action has worked in the past to improve the structure of terraces to a crescent shape to reduce labour input (to half), increase the lifetime of the structure (double). This activity raises moisture content of the soil and has been found in previous studies to contribute to a doubling of yields per unit area (as part of the package of plough, extension, improved seeds and terraces) (EC Food Security Proposal). Farmers are trained, through village extensionists, in terrace layout, levelling and controlled drainage.

- Plough

Wadi soils, whilst fertile, are heavy, and it is not possible to cultivate without use of a plough. Camel ploughs were more predominant in the past but camels are not widely owned by the poor. During the 1980s Practical Action (then Practical Action) developed an improved donkey drawn plough in collaboration with local farmers. Plough use contributed to a doubling of the area cultivated and to greater productivity per area. Plough use reduces labour demands for weeding as well as cultivation, thus benefiting women who are usually employed in this task. The LINKs evaluation found that the average time spent weeding 1 mukhamas was 7.5 days by hand and just 1.9 days using plough (Darlive project document, 1998). Village extensionists (see below) are trained in plough use and transfer this knowledge to community members.

Ploughs are made locally by trained blacksmiths (see below). These are then purchased by the Village Development Committee and either sold on to richer farmers who pay in 3-4 instalments, rented to poorer farmers, or made available for free to the poorest farmers. In some communities seed and tool stores have been constructed to house these ploughs and other agricultural tools available for sale or rent.

“The most important intervention has been the donkey plough. It has led to increased water infiltration so that plants can now survive a long dry spell and there is better production” Focus discussion Maba.

“The plough is the most important for us, and the kitchen garden for vegetables. We used to plough with horse or camel but could not be used by women, donkey plough can be used by women. Now we grow okra, aubergine and tomato, and we are using early maturing varieties. Our production is three times what it was before the plough. There is more diverse food in the household, which is good for health. There is food all year round when before there was not.” Women’s focus group, Azagarfa

- Community seed and tool systems

Many traditional seed varieties were lost from Darfur during the drought and famine during the 1980s. Hence seeds for staple crops are mainly based on those distributed by aid agencies during that period. Some are not highly drought tolerant varieties. Practical Action has therefore worked with farmers and other agencies to identify more drought resistant varieties of millet and sorghum, replicated them through key farmers and promoted them more widely in the communities where they are working.

Farm tools and other hybrid seed varieties (e.g. watermelon etc) are also hard to access in remote communities. Seed and tool stores have been established in many communities to help overcome these problems. Some tools are made by local blacksmiths (including wheelbarrows, hoes, etc as well as ploughs), other tools, seeds and equipment are bought from El Fasher. These are managed by committees answerable to the Village Development Committee and are given a small revolving fund as a start-up.

“The most important intervention has been the seed and tool bank. Beforehand we had to go to El Fasher which is a whole day round trip. That would require 5 Sudanese Pounds each way as well as food in El Fasher” Focus Discussion in Ghiriega.

Concrete grain banks have also been constructed for communal grain storage. This is a more secure alternative to the traditional method of storage by burying or keeping in the homestead, both of which leave crops vulnerable to losses from moisture and insect or rodent pests. A 1999 study (Shazali) found storage losses to be around 25 to 50% of total harvest and were considered unavoidable by farmers. Increasing food availability through improved storage can therefore be as important as increasing production.

Crops can be stored in the community grain bank on both an individual and a collective basis. Mechanisms are set up so that farmers can sell grain into the store at the market rate during surplus and buy it back at the same rate during times of scarcity. This helps to stabilise prices in the community, provides a safety net for the poor, and spreads risk from raiding. Training is also given in bulk storage packing, aeration, pest and quality control. The grain store is managed by a dedicated committee.

- Pest control

Pest control advice and services are delivered by community agricultural extension agents linked with the government Plant Protection Department. Through this linkage, communities participate in general surveys and can quickly make emergency contact in case of an attack by for example desert locust or grasshoppers Extensionists also advise on the use of indigenous species such as Neem tree leaves for more localised pest control.

4.2.1 Outcomes

A number of trainings relating to technologies for improved crop production were carried out in project communities. Survey data illustrates high participation by community members in these trainings (see table below). The majority of trainings were reported as being provided by Practical Action staff or the Community Extensionist trained by Practical Action. There are some incidences of learning from another farmer in the case of terrace layout and plough use which is also encouraging as it indicates that technologies can spread through word of mouth.

Participation in crop production related training

Training	Number reporting participation (sample = 99)
Terrace layout	62
Plough use	67
Seed multiplication	85
Pest control	42
Seed and tool store	61
Earth dams	47

Training relating to crop production by organization

	Practical Action	Other NGO or UN	Govt. ext. worker	CBE / paravet	Another villager	other	Total
Terrace layout	48	1	1	9	3	0	62
Plough use	46	0	1	16	4	0	67
Seed multiplication	61	1	0	20	1	2	85
Pest control	32	0	1	8	1	0	42
Seed and tool store	53	0	0	5	0	3	61
Earth dam	42	0	1	3	0	1	47

The study aimed to understand changes in farm productivity and output over the project period with the expectation that increases would be observed as a result of new technologies described above. As the situation in Darfur has more generally deteriorated over the project period, the current situation was also compared to a similar control community.

The following tables illustrate that a majority of survey respondents report increases in crop productivity over the period since the project interventions. However, this is by no means universal – 35% reporting that productivity had decreased. Unfortunately data collected relating to total farm production was not accurately recorded and could not be analysed. In focus groups some decline in production was mentioned due to the fact that there had been several recent years of drought and that soils are becoming depleted.

“Cultivation of goz (sandy) soil has expanded but production has decreased due to exhaustion of soil. 50 to 60% of farmers have shifted to cultivation of wadi (clay) soil with the technology package (plough and terrace). It is very hard work and sometimes the drought is so bad that results are discouraging. Still production from one unit of wadi is the same as from 20 units of goz soil” Focus discussion, Ghiriega

The majority of control village respondents experienced a decrease in crop productivity over the same period. Mean output for the range of crop outputs also tends to be lower in the control village compared with the project villages. This is particularly true of watermelon and karkadeh most likely because these were crops which Practical Action

was promoting in project communities and therefore might not be so popular elsewhere. These results illustrate that although the situation has declined, project villages are still coping better than other communities. This was also reiterated in community discussion: that the potential of the technologies was good and that in many cases they were giving better harvests in times of drought than they would otherwise have had.

The diversity of crops cultivated in project villages and is higher than in the control village. This reflects the project approach to encourage diversification and the availability of seeds for cash crops.

“Before we just grew millet. Now the seed available from the seed bank is millet, sorghum, cow pea, sesame, cucumber, water melon, okra and tomato” Focus discussion, Ghiriega

“We grow F1 varieties for vegetable seeds because these are better quality for vegetable sales (especially watermelon). Local tomato exists but F1 is better as it is less squishy. Local okra is preferred for taste but is very spiny for preparation and drying.” Women focus group, Azagarfa

“Cash crops now are tobacco and watermelon and vegetables (only tobacco before). Income has increased from these sales. Watermelon is new to the area, but is now one of the most important crops. That can bring US\$1,000 earning now for a big farmer. All farmers grow at least some watermelon.” Focus discussion, Abudigis

Area under cultivation has increased marginally in three of the surveyed project communities. However in Azagarfa, where the dam was constructed, average land area under cultivation had increased by a highly significant 37%. This illustrates the important impact of dam construction in extending the possibilities for crop cultivation.

Crop related trainings / technologies were highly valued by those surveyed and seed multiplication, terrace layout and plough use were ranked top, third and fourth respectively out of the principal project interventions. In focus group discussion the combination of plough, seeds and terrace technologies was also consistently rated as most important.

Productivity of crops

		Has productivity of crops increased?				Total
		increased	same	decreased	no crops	
project	Count	58	4	35	2	99
	%	58.6%	4.0%	35.4%	2.0%	100.0%
control	Count	5	2	15	0	22
	%	22.7%	9.1%	68.2%	.0%	100.0%

Effective grain storage is important for food security. Hence Practical Action supports construction of community grain stores for more secure storage. It was expected that people would have shifted from storing their grain in a Matmoras (burying in the ground), or in a Tukul (storing in a simple hut) toward use of the community grain store. However, as the tables below illustrate, whilst there has been a shift from use of Matmoras towards greater use of Tukul, still only around 6% are using a community store. This figure is surprisingly low, particularly since more than this number mentioned grain stores as a reason why they felt more resilient to drought.

During one community visit it was reported that community store had been raided by the rebels and grain had been taken. For this reason some community members were now reluctant to store grain there. As a result of such raids in some places grains from stores were redistributed in small amounts to be stored in a number of houses and collected again after the situation settled.

Type of grain storage before and after project

		Type of grain storage before project			
		Community grain store	Tukur	Matmoras	Total
Project before		0	7	92	99
	%	.0%	7.1%	92.9%	100.0%
Project now		6	26	65	97
	%	6.2%	26.8%	67.0%	100.0%

Type of grain storage now, project and control

		Type of grain storage now			
		Community grain store	Tukur	matmoras	Total
Project villages		6	26	65	97
	%	6.2%	26.8%	67.0%	100.0%
Control villages		0	6	18	24
	%	.0%	25.0%	75.0%	100.0%

4.3 Participatory Technology Development

Participatory Technology Development is another core food security approach applied by Practical Action in many of its international projects including in Darfur, though the precise nature of the approach can vary from country to country. In Darfur, PTD activities involve:

- i. Facilitating an iterative process of action-reflection with farmers (women and men) to strengthen their analysis of agricultural problems and cause and effect linkages within the wider socio-political and agro-ecological context they live in. This is achieved through formal and informal meetings, talks, discussions, visits, and demonstrations.
- ii. Assisting and promoting farmer experimentation in appropriate sustainable agriculture techniques by implementing the plans drawn up and organised through the relevant VDCs and Women's Groups.
- iii. Sharing and scaling up the findings of these experiments by: a) promoting farmer-to-farmer exchange visits, training and demonstration; b) supporting and training village extension agents and women technology leaders, and; c) organising community activities such as seed fairs and farmer competitions. (EC Food Security proposal)

AS a result of PTD it could be expected that uptake and continuation of training activities would be high as participants are unlikely to forget the practice or have difficulty implementing it over time. Of those that responded, in the case of 93% of the trainings they were still being practiced. There were no significant patterns amongst those that were no longer being practiced.

4.4 Livestock Training on animal husbandry

Whilst local people have good indigenous knowledge of livestock management, suited to the local environment, there are some areas in which practice could be improved, such as feeding, breeding, handling and restraint of animals, principals of nutrition, housing, animal health maintenance through regular worming. Training tends to be provided to project staff or staff of the local Veterinary Department.

- Animal lending

Animals serve as a mechanism for saving. People who have sufficient assets, in particular animals, are more likely to be able to cope during times of crisis as they draw on this resource. Goats are important both for food and for sale to purchase medicines, or pay school fees etc. Donkeys are used for water and firewood collection, travel, crop transport and to draw ploughs. Drought and conflict has severely affected households stocks of animal resources leaving them more vulnerable. It has been reported that since the start of the conflict, villagers have lost 60% to 90% of their donkeys due to theft, killing and lack of vital support. Donkey prices have also become hugely inflated making them unaffordable to the poor.

Particularly under the Kids for Kids projects, Practical Action has established Lending Committees to handle the loaning of goats and donkeys. Repayment is in the form of kid goats. Donkey loans are seen as a permanent loan as long as the animal is well cared for. The committees develop eligibility criteria to identify the neediest households, and arrange for purchasing and transportation of animals to be loaned.

- Drug revolving funds

Availability and affordability of veterinary drugs is a challenge to livestock keepers due to the distance and cost of travel to towns. Drug revolving funds have been established in a number of communities and are managed by a community committee. The project provides the start up capital for the fund, and it should then be managed to ensure affordability and cost recovery. Training is also given which covers drug procurement, drug storage, inventory taking, pricing, and planning for restocking the fund.

4.4.1 Outcomes of livestock interventions

The situation in terms of livestock in project villages has deteriorated over the period since the project began. Livestock ownership is reported as having fallen significantly for cattle, sheep, goats and poultry. The context of drought and conflict are key explanatory factors here. In focus group discussions 2005 and 2006 were reported as particularly

bad years for both conflict and drought, resulting in considerable displacement and migration of some family members to look for work. Looting of animals, particularly goats, was reported as common during these two years. In Ghireiga they reported losing 300 goats and 150 cows during 2006. An outbreak of a sheep disease in 2006 was also reported in Maba. This situation is significantly contributing to poverty levels in the region.

Despite the fall in livestock numbers, however, respondents reported that the productivity and health of animals had improved (see tables). The reasons given for the responses for both increased productivity and decreased mortality are almost universal in their attribution to the availability of paravets and / or the availability of drugs. Although paravets have only been operating in these villages for a maximum of four years, the impacts are being felt and the levels of appreciation for the services are high.

Changes in livestock ownership in project villages, before project and now.

	N	Minimum	Maximum	Mean	Std. Deviation
Number of cattle now	12	0	15	2.33	4.519
Number of cattle before	12	0	40	10.25	13.988
Number of sheep now	43	0	50	7.84	11.586
Number of sheep before	43	0	200	25.58	51.724
Number of goats now	81	0	18	6.57	4.138
Number of goats before	81	0	100	8.32	16.176
Number of donkeys now	96	1	5	1.69	.837
Number of donkeys before	96	0	5	1.15	.882
Number of camel now	5	0	1	.60	.548
Number of camel before	5	0	1	.60	.548
Number of horse now	26	0	3	.92	.560
Number of horse before	26	0	8	.81	1.625
Number of poultry now	85	0	50	8.91	9.135
Number of poultry before	85	0	100	10.41	16.969

Productivity of livestock

		Has productivity of livestock increased?				Total
		increased	same	decreased	no livestock	
project		76	4	17	2	99
	%	76.8%	4.0%	17.2%	2.0%	100.0%
control		1	2	17	2	22
	%	4.5%	9.1%	77.3%	9.1%	100.0%

Mortality of animals

		Has mortality of animals increased?				Total
		increased	same	decreased	no crops	
project		26	1	69	2	98
	%	26.5%	1.0%	70.4%	2.0%	100.0%
control		9	1	10	2	22
	%	40.9%	4.5%	45.5%	9.1%	100.0%

4.5 Access to potable water

Access to potable water is another key challenge in the Darfur region. It is predominantly the role of women to collect water and this can sometimes take several hours per day. Water quality is also a problem as haffirs (large reservoirs) can become polluted with animal faeces either due to run off during rains or due to animals being watered at the edge of the haffir.

- Haffirs, hand dug wells and handpumps

Practical Action has supported building and improvement of haffirs. Improvements include the establishment of sand filters at the point of inlet, piped outlet into animal drinking troughs or through nearby hand dug wells. The EC Food Security Project oversaw the construction of 10 boreholes with pumps, 5 hand dug wells and 2 haffirs.

- Donkey Carts to Ferry Water

Haffirs and wells are often located at some distance from communities. Improved water transportation can reduce the time and physical strain of water collection considerably. Donkey carts have been constructed by blacksmith societies and distributed through village development committees. These are rented out to water carriers from the poorest sector of the population as a new income generating opportunity.

Forty eight people responded that they benefited from the digging of haffirs, and the same number benefited from provision of well and/or hand pumps. The latter may not have been provided by Practical Action: in focus groups other agencies were mentioned as providing this service.

4.5.1 Outcomes of water interventions

In some project communities access to and quality of water was expected to increase as a result of haffir (reservoir) construction as well as improved access points. The majority of respondents report improvements in both aspects of water resource availability. A high proportion of control village respondents also reported improvements in was access and quality – possibly because another agency has undertaken water related activities there.

Although the survey results are quite positive, in focus groups people still expressed that water shortage was a key problem. In Abudigis a dam had just been completed and people were optimistic about its benefits. In Azagarfa a dam was constructed in 2002 and was benefiting people with land nearby, but people expressed the need for more dams to take full advantage of the plentiful wadi land in the area. In Maba and Ghiriega wells with hand pumps had been dug under the EC Food Security Project but these were not felt to be sufficient to meet the needs.

Access to and quality of water

						Total
			improved	same	worse	
Has access to water improved?	Project		74	17	8	99
	%		74.7%	17.2%	8.1%	100.0%
	control		20	4	0	24
	%		83.3%	16.7%	.0%	100.0%
Has quality of water improved?	Project		65	24	9	98
	%		66.3%	24.5%	9.2%	100.0%
	control		23	1	0	24
	%		95.8%	4.2%	.0%	100.0%

4.6 Community Based Extension

Agricultural and livestock community extension agents have been trained under a number of different projects in Darfur in order that basic services are available at the community level. This issue is documented in Part II of the report (from page 42) which focuses on community extension services.

4.7 Income generation capacity building

- Vegetable and fruit processing

In order to improve availability of vegetables and fruits for an extended period beyond the harvesting season, households typically sun dry foods such as tomato, okra and chillies by laying them out in the sun. The traditional approach, however, tends to be susceptible to spoiling of the produce by sand, dirt, rains, and insect infestation, leading to losses in quality and quantity. Training in improved and some new processing and storage techniques will greatly reduce losses and lead to improved nutrition. Alongside drying of vegetables and fruits, women producers are also trained in the production of fruit juice cordials, grain processing and milling, oil pressing and crop and product packaging and storage.

- Blacksmiths

As noted above, Practical Action developed an improved plough more suited to the needs of poorer groups, during the 1980s. The strategy for dissemination of these ploughs was to train up a large number of blacksmiths to produce and market the ploughs in their own communities.

- Pottery

Pottery makers tend to be the wives of blacksmiths as they are from a particular tribe which links these two professions. They are a poor and excluded community living on the very outskirts of El Fasher in a low quality houses, whether they are local to the town or IDPs. They produce large pots which are used for water storage. They are all women and are all members of the Women's Development Association in El Fasher.

4.7.1 Outcomes of income generation activities

During the project 22 women were trained in food processing and these in turn trained a further 150 women. Of those surveyed 31 said that they had benefited from this training. In focus group discussion it was stated that they are mainly consuming these processed products themselves storing them for when those vegetables are not in season but some are also selling in the local (village) market which brings some cash income to the women. They reported that travelling to El Fasher to sell produce is costly and time consuming given the poor transport options and it is not widely acceptable for women to travel such distances and sit in the market place.

Despite the above limitations, market opportunities could be explored for some of the processed food products over time.

It was not possible to convene a formal meeting with members of the blacksmiths association during the study visit. However, during an informal discussion with blacksmiths in Azagarfa they reported that the association was strengthening. Having started with a revolving fund of US\$1,000 they reported now owning capital worth US\$3,000 mainly in the form of steel. Most blacksmiths are now based in El Fasher where they have some large contracts producing ploughs funded by various development/humanitarian agencies, e.g. FAO. With a membership of around 400 they have received a number of contracts of around US\$250,000 to US\$500,000 from organisations like the FAO and COOPI (Italian agency) and between 2005 and 2008 they have produced 18,700 ploughs (based on records of Md. Siddig). They work collectively to fulfil these contracts which are managed by the blacksmiths association. As their families and farms are still based in the community they also have a store of steel there and produce tools for the community during periods when they are at home.

The potters' earnings from sale of pots are quite low, but membership of the WDA has helped them to be more organised and to sell their produce collectively. They are now also receiving other training and support from the WDA projects, including goat restocking. Previously they were not receiving any support from humanitarian agencies because even those who are displaced are not living in IDP camps. Membership of the WDA has improved their lives to some degree although the amount of support they report receiving is not extensive.

4.8 Sustainability of practice

No exit strategy has been put in place for any of the projects in Darfur, with the tendency for Practical Action to keep supporting the same communities as new projects are funded. The typical project time frame of three to four years is not considered sufficient for establishing sustainable progress towards development, particularly in the area of community organisation.

4.9 Broader impacts

This section details study findings relating to the broader impacts of the project activities: impact on asset ownership, on farm production, on household resilience, and on food security. It is well recognised that there are challenges of attribution of change or impact to project interventions. We have used two methods of measurement: comparing before and after scenarios in the project communities, and comparing project communities with a control community (where this data was collected).

4.9.1 Changes in asset ownership

The following tables illustrate that type of house has improved over the period since the start of the project. There is also more incidence of improved house construction in the project communities as compared to the control.

Type of house before and after project

		Type of house			
		Good (Brick)	Medium (Mud)	Poor (Straw)	Total
Project before	Count	0	5	94	99
	%	.0%	5.1%	94.9%	100.0%
Project now	Count	1	17	81	99
	%	1.0%	17.2%	81.8%	100.0%

Type of house now, project and control

		Type of house			
		Good (Brick)	Medium (Mud)	Poor (Straw)	Total
Project now	Count	1	17	81	99
	%	1.0%	17.2%	81.8%	100.0%
Control now	%	0	1	23	24
	%	.0%	4.2%	95.8%	100.0%

The majority of communities in the El Fasher region are reliant on kerosene lamps for lighting. The ability to purchase a generator or solar technology would have illustrated a very significant improvement in income. The data illustrates that only one person has upgraded to solar lighting.

Source of lighting before and after project

		Source of lighting before project			
		generator	k-sene	solar	Total
Project before	Count	1	95	0	96
	%	1.0%	99.0%	.0%	100.0%
Project now	Count	0	96	1	97
	%	.0%	99.0%	1.0%	100.0%

Source of lighting now, project and control

			Source of lighting now			Total
			generator	kerosene	solar	
control or project	project	Count	0	96	1	97
		%	.0%	99.0%	1.0%	100.0%
	control	Count	0	22	0	22
		%	.0%	100.0%	.0%	100.0%

The following tables illustrate mean asset ownership amongst the survey sample before the project (for project communities only) and when the survey was carried out (for project and control communities). The data illustrates an increase in mean asset ownership across all assets. The numbers are small because ownership of many of these assets is actually quite rare. The tables also illustrate higher average asset ownership in the project communities as compared with the control community for all assets except donkey carts and shovels.

Ownership of household assets

	Project mean before	Project mean now	Control mean now
Number of radio	.66	1.04	.74
Number of television	.00	.11	.00
Number of bicycle	.03	.06	.04
Number of phone	.01	.37	.22
Number of donkey cart	.10	.21	.30
Number of motor vehicle	.00	.01	.00
Number of huts	2.08	3.02	2.67
Number of lavatory	.80	1.13	.65

Ownership of farm assets

	Project mean before	Project mean now	Control mean now
Number of plough now	.21	.87	.67
Number of pick axe now	1.13	1.49	1.13
Number of shovel now	.61	1.00	1.00
Number of sprayer now	.07	.15	.05

4.9.2 Resilience

Drought is a regular occurrence in Darfur and many of the interventions would be expected to make people more resilient, both in terms of increasing water availability (soil and water conservation, hafirs, etc) as well as crop and seed storage, and improved wellbeing and incomes from other interventions. A high proportion (72%) of respondents to the survey reported that they are now more resilient to drought. The most common reason given was based on having sufficient harvest to store enough to last them through the drought. Other frequently cited reasons were the availability of a grain store, having skills to gain an income (blacksmiths, shoemaker), improved availability of water, skills in processing food for better storage, and other capacity building received in how to cope with drought.

In terms of ability to cope with conflict a smaller proportion (48%) stated that they were better able to cope. The reasons given were also very varied, mainly relating to different aspects of the project interventions. However there were no clear patterns as to which aspects of the project in particular aided coping with conflict.

Resilience to drought

		Are you more resilient to drought?			Total
		Yes	Same	No	
project	Count	71	4	23	98
	%	72.4%	4.1%	23.5%	100.0%

Data is not available for control

Ability to cope with conflict

		Are you more able to cope with conflict?			Total
		Yes	Same	No	
project	Count	46	10	40	96
	%	47.9%	10.4%	41.7%	100.0%

Data is not available for control

4.9.3 Changes in Food Security

Impacts of project activities on food security were assessed in the survey through questions about changes in consumption of highly nutritional foods. A general trend towards increased consumption was reported, though this was by no means universal. A majority however, also reported consumption of relief (77%) of those 62% reported an increase in consumption of relief. Data relating to food consumption for the control village was not collected.

A further measure of food security was the measure was the number of months for which households have to buy in staple grains (millet and sorghum). In project villages the trend not been very positive. More people were fully food secure before than they are now, although the proportion purchasing grain for more than seven months of the year decreased marginally. Even comparing with the control village, project villages are faring marginally worse with respect to food availability. This response seems to contradict earlier responses regarding coping with drought where project respondents report improved harvests and enhanced ability to store for the full season.

Quantity of various food stuffs consumed per meal now compared to before

		Quantity per meal now compared to before			
		More	Same	Less	Total
Meat	Count	53	24	19	96
	%	55.2%	25.0%	19.8%	100.0%
Milk	Count	53	28	15	96
	%	55.2%	29.2%	15.6%	100.0%
Egg	Count	41	21	30	92
	%	44.6%	22.8%	32.6%	100.0%
Vegetable quantity	Count	55	30	12	97
	%	56.7%	30.9%	12.4%	100.0%
Vegetable number of varieties	Count	62	21	16	99
	%	62.6%	21.2%	16.2%	100.0%
Fruit	Count	36	36	16	88
	%	40.9%	40.9%	18.2%	100.0%
Relief	Count	47	18	11	76
	%	61.8%	23.7%	14.5%	100.0%

Number of months buying staple, project villages before project and now.

		How many months buying staple							
		0	1- 2	3- 4	5-6	7-8	9-10	11-12	Total
Project now	Count	7	14	31	24	13	6	3	98
	%	7.1%	14.2%	31.6%	24.5%	13.2%	6.1%	3.0%	100.0%
Project before	Count	15	16	22	18	12	10	4	97
	%	15.5%	16.5%	22.7%	18.5%	12.4%	10.3%	4.1%	100.0%

Number of months buying staple in last 12 months (project and control)

		How many months buying staple							
		0	1- 2	3- 4	5-6	7-8	9-10	11-12	Total
Project	Count	7	14	31	24	13	6	3	98
	%	7.1%	14.2%	31.6%	24.5%	13.2%	6.1%	3.0%	100.0%
Control	Count	5	2	6	2	4	1	1	20
	%	25.0%	10.0%	30.0%	10.0%	20.0%	5.0%	5.0%	100.0%

Overall self assessment

An overall self assessment of the household situation before and after the project was requested in the survey. The results show a general improvement. There has been a significant reduction in the number stating that they are unable to meet their household needs from 29% to 5%, and a marked increase in the number saying they are doing well from 12% to 38%. Comparing the self assessment of project and control villages at the time when the survey was taken, the project villages are doing significantly. In control village no-one rated themselves as doing well.

Self assessment before and after the project, project villages

		Self assessment before and after				Total
		doing well	doing OK	struggling	unable to meet needs	
Project before	Count	12	36	22	28	98
	%	12.2%	36.7%	22.4%	28.6%	100.0%
Project after	Count	38	32	23	5	98
	%	38.8%	32.7%	23.5%	5.1%	100.0%

Self assessment now, project and control

		Self assessment now				Total
		doing well	doing OK	struggling	unable to meet needs	
project	Count	38	32	23	5	98
	%	38.8%	32.7%	23.5%	5.1%	100.0%
control	Count	0	14	6	3	23
	%	.0%	60.9%	26.1%	13.0%	100.0%

PART II - Survey of practicing paravets and village extension agents (Stuart Coupe)

5 Practical Action Approach to Community Based Extension.

The idea of giving a specialised and intensive technical training to 1 or 2 people in a community was originally a pragmatic approach to project implementation in a context where Practical Action had a large number of communities to cover over a wide geographical area, with a small number of staff. It was then possible to have the village specialists as interlocutors and promoters of a variety of technologies, helping to turn project implementation into a continuous process with occasional support and review from the NGO professionals. From there, the potential to develop these intermediaries as independent, self-deploying service providers on a long term basis was soon realised. At that point systematic training of community-based extensionists began.

This training had some similar characteristics across the different regions and continents. Training was designed reflecting the livelihoods base of the local communities to be served: in Kenya pastoralist zones the training concentrated on livestock whilst in Bangladesh there were separate trainings for fisheries, agriculture and livestock. Each community was requested to put forward candidates against a list of agreed criteria and these were then discussed openly with Practical Action, before a consensus was reached on the best individual or individuals to go forward. The training itself was organised with the participation of relevant district level government staff, whose *per diem* requirements were paid for from project budgets. The curriculum was designed to reflect the educational level of the candidates, many of whom only had a few years of primary education. A wide range of cultural and linguistic barriers also were taken into account in the delivery of the training. In crop based agriculture, the training reflected the alternative paradigm of Practical Action in working with locally available resources rather than high dependence on external inputs. In the case of veterinary training the ministries tended to demand tight control of the training schedule and apply strict limitations on the training, in the interests of maintaining very clear hierarchy between the trainees and government/private vets.

Compared to training conventionally offered by NGOs to community based workers the training offered by Practical Action was more intensive and comprehensive in nature. Its duration was between 15 and 30 days, this was continuous residential training with the

exception of Peru where it was split into 3 or 4 day sessions over approximately 9 months. In each case there was follow up support for the initial field practice and opportunities for a diverse range of exposure visits to see technologies and techniques in practice. The training opportunity was also kept quite exclusive, as care and attention has always been given to keeping the number of trained extensionists sufficiently low so as to not to create an oversupply of very similar service providers in a particular zone and thereby reduce the potential terrain and viability for each individual. In all the four case studies reviewed, the certificate issued to the newly trained extensionists was signed by a senior district official and a senior Practical Action staff member. It was issued by Practical Action and did not have any legal standing or formal recognition from relevant ministries.

5.1 Practical Action Survey, 2008

For the survey on the sustainability and impact of community based extension services a questionnaire was developed which looked into the same issues across the four countries, Bangladesh, Peru, Sudan and Kenya, and focussed on some specific themes of interest.

Education: does the educational level of the community based extensionists correlate with later relative success in practice.

Training: the original motivation of the individual for putting themselves forward for the training, the length and format of the training, most useful and least useful topics, other training subsequently received, types of equipment and inputs donated to them immediately after training.

Coverage: how the coverage area of the service providers has spread out from the original zones and target beneficiaries of Practical Action Projects, and also to see the different models of service provision.

Technical Aspects: the level of demand for the different types of skills, expertise and services offered by extensionists, and new and innovative techniques and approaches pioneered by individual extensionists

Earning/Payment: what parts of the service are voluntary, which attract payments/stipends from NGOs or other institutions, and which aspects have been commercialised; type of payments received; and approach to those who cannot pay

Linkages: linkages to other extensionists, to government and to the private sector in terms of sourcing drugs and other supplies, and access to information and opportunities.

Sustainability/Motivation: the key challenges they face in their work, what they have done to overcome them, why they persist despite all of these challenges and their view on the qualities of a successful community extensionist

6 Survey of Village Extension Agents and Paravets trained by Practical Action in North Darfur

Extension Context

This section is based on an interviews Dr Mirghani Ibnoaf, Ministerial Advisor, Science and Technology, Muktar Ahmed, Director of Agricultural Extension Department, Ministry of Agriculture. Mr. Latif, Director of Extension, North Darfur State, Dr Ms Ibtisan Mohammed Abbaken, Department of Animal Resources, North Darfur State and discussions with Practical Action Sudan staff.

Due to a lack of finance, very few extension activities are provided by the central government in Sudan, the concentration of agricultural investment is in large scale irrigation schemes along the Nile, which are handled in another section of the agriculture ministry. General extension to small scale farmers is neglected. The situation is typical of least developed countries which maintain an extension bureaucracy but in most years, the budget allocated is sufficient only to cover a statutory commitment to salaries, leaving little or no resources for operations .

When project finance is available, a standardised package is promoted: certified seed, new ploughing technologies, planting at the bottom of the ridge, and modifications to the timing of sowing. The most recent funding through the Sudan Department for Agricultural Extension was from the Arab Authority for Agricultural Investment and Development which provided \$US100K. The state level ministries of agriculture competed for this funding; it was awarded to Sennar State, it worked with 150 contact farmers over 2 years. This is the only operational activity of the national agricultural extension ministry and yet it is the size of a modest project implemented by a NGO. In North Darfur there are 77 government agriculture staff, around 15 are based in El Fasher. The impact and input from these staff is negligible at present. It is not a priority for the government to promote extension in the locality offices in the current conflict situation. The support from the central state to North Darfur is zero and from the state level to the locality, support is also zero. There are logistical problems: the locality based officers do not have access to villages. In these circumstances the Village Extension Agents provide a very good service linkage with the state Agricultural Extension Department. On pest control in particular they are carrying messages to the people and from people back to the Department.

The training of Village Extension Agents is done with the close cooperation and participation of the North Darfur Ministry of Agriculture. The Ministry has been open to modifications in traditional extension messages recommended by Practical Action. There

is an agreed selection criteria for candidates between the Ministry, Village Development Committee and Practical Action. Some candidates rejected but it is a consensus process, the ideal profile is as follows:

Active farmer, literate, resident, acceptable to the community, speaks local languages. Young persons between 25 and 35, married, women are encouraged, good communication skills. (Practical Action staff)

The curriculum covers pest control, terrace construction, farm management: preparation, sowing, weeding, harvesting, storage, monitoring, seed selection, drought resistance, on-farm research, testing for moisture in soil and atmosphere, rainfall monitoring and gardening. This is a three week continuous training. Refresher training is given, prioritising villages where new dams have been constructed

The work of a Village Extension Agent is seasonal so it cannot become a full time occupation. To incentivise the role there is provision of donkey, sprayers and other tools. Whether the VEA is able to lease out equipment for income is a VDC level decision. They play a key role in distribution of improved seeds from the project and other humanitarian sources. For very vulnerable families they organise land preparation.

The VDCs are tackling the issue of the incentives for VEA directly with the state authorities, without any breakthrough as yet. There is a precedent from Kassala of the state paying salaries to community midwives trained by Practical Action, but the case for agriculture is still pending. If the Darfur VEAs are requesting further incentives from the VDC, carts are sometimes given, or even a *per diem*. They are resource persons in the village, village well being is their main incentive. Self help mobilisation is the core principle. The rich can contribute resources to the process to enhance their social prestige.

Veterinary Services

In the government system of Sudan there is provision for a veterinary extension department at State Ministry level, called the Department of Animal Resources. Not all states have established the department; it is present where the livestock sector is significant. According to Dr. Ibnoaf,

Extension is a new word/concept in Arabic culture which has been translated into a top-down approach. Technologies and farm practices are determined by officials as “good” or “bad” and nothing in between. A lack of trust between

professional vets and communities at grassroots level has been the logical outcome.

From the mid-1980s onwards, the paravet concept emerged in a context where veterinary drugs were available in the market, but in poor condition and unregulated. Local healers continued their traditional practice. The Department of Animal Resources could not cover the villages, so literate villagers were called upon to try to work out what drugs could be used.

In the immediate post-colonial period, the government offered veterinary upgrades to veterinary nurses and assistants and new service veterinarians. There was a Federal Veterinary Upgrading School, and each certification meant an additional point in the civil service grades. This system collapsed in the mid-1980s due to decentralisation of extension functions to state governments. The NGOs have stepped into the vacuum with the concept of paravets. The government authorities provide the training solely when an NGO budget is available to cover their fees.

In North Darfur nomadic pastoralists cannot be reached by veterinarians during long migrations, so the need for an auxiliary within such communities has long been recognised. The state developed its own initiative for training of such auxiliaries but could not implement it due to lack of resources. NGOs played an important role in reviving this training agenda. The Department is, nevertheless, in charge of the NGO training, the NGOs have very little discretion over the curriculum.

Sixty-five vets are employed by the North Darfur government; that means 1 or 2 vets per locality. Due to insecurity some paravets have taken more responsibility, like vaccination. This is an exceptional state of affairs, this would only normally happen under the direct supervision of a vet. The government staff do not organise the paravets into groups and work systematically with them for fear of conferring official status on them. The Department does facilitate the work of individual paravets with information cards and certificates, to support their work in the field. In the current emergency, vaccines are distributed to paravets for disease outbreaks

6.1 Information about the Interviewees.

Surveys of paravets and VEAs were carried out on two separate days at the offices of Practical Action in El Fasher. These were two groups of approximately 20 persons. The individual questionnaires were carried out during the morning and then a group discussion lasting 2 hours was conducted with the whole group. A further 15 individual

Paravet/VEA questionnaires were conducted during the course of village visits. Despite repeated requests, it was not possible to arrange for VEAs or paravets who had become inactive after training to join these discussions. The reasons is that Practical Action is not in touch with such people and the extra resources required to track them down and persuade them to travel to El Fasher for the session were not worth investing as they are unlikely to have agreed to attend. This is because of potential social shame of the situation.

Education

In the Darfur sample, of 28 VEAs and 27 paravets, there are a large proportion of younger extensionists, 40-50% under 35. This is not surprising given the criteria for selection laid down by Practical Action; although the fact that there are 20% over the age of 40 shows that these criteria have been applied flexibly. The number of paravets over 45 years of age is negligible and this opens up the prospect of long term paravet practice over the next generation. Approximately 90% of the surveyed group are married.

Age groups

Age	Agricultural extension	Paravet	Total
20-25	3 10.7%	5 19.2%	8 14.8%
26-30	4 14.3%	5 19.2%	9 16.7%
31-35	6 21.4%	4 15.4%	10 18.5%
36-40	7 25.0%	7 26.9%	14 25.9%
41-45	5 17.9%	4 15.4%	9 16.7%
46-50	2 7.1%	0 .0%	2 3.7%

50+	1	1	2
	3.6%	3.8%	3.7%
Total	28	26	54
	100.0%	100.0%	100.0%

Unless the sample was biased, with a disproportionate number of women coming forward for the interview, Sudan has a high proportion of woman community extensionists. Women are more likely to be put forward by their communities as VEAs (40%) rather than paravets (25%), this is due to some reservations at the time of community selection about the physical capacity of women to deal with large animals, although in practice this has not been a problem for the women that are selected.

Peru has recently corrected the imbalance by training an exclusively female group of 45 alpaca extensionists in 2007/8. The average representation of women is approximately 20% and in Bangladesh women are largely confined to the role of poultry vaccinator, whereas in Darfur they are taking on the full range of extension activities. This challenges the perception of Darfur as a conservative Islamic society with proscribed roles.

Sex of the respondent

Sex			
	Agricultural extension	Paravet	Total
Male	16	20	36
	57.1%	74.1%	65.5%
Female	12	7	19
	42.9%	25.9%	34.5%
Total	28	27	55
	100.0%	100.0%	100.0%

In terms of education, the extensionist group come from an educated elite within the villages, with approximately 90% of the sample having been educated to Class 8 (intermediate secondary level) and above. The women extensionists, although literate,

are not present the group that has attained further and higher education (pers. comm. Md. Siddique) Amongst the paravets, the number who did not attain secondary level is negligible and approximately 45% of the sample has the level of High School Certificate or above.

Level of Education

	Level of Education		
	Agricultural extension	Paravet	Total
Not attended	4 14.8%	1 3.8%	5 9.4%
Class 2	1 3.7%	0 .0%	1 1.9%
Class 4	0 .0%	1 3.8%	1 1.9%
Class 6	2 7.4%	2 7.7%	4 7.5%
Class 8	5 18.5%	1 3.8%	6 11.3%
Class 9	6 22.2%	6 23.1%	12 22.6%
Class 10/SSC	1 3.7%	2 7.7%	3 5.7%
HSC	2 7.4%	5 19.2%	7 13.2%
Graduate	4 14.8%	4 15.4%	8 15.1%
Masters	0 .0%	3 11.5%	3 5.7%
15	1 3.7%	0 .0%	1 1.9%
16	1 3.7%	1 3.8%	2 3.8%
Total	27 100.0%	26 100.0%	53 100.0%

Training

Practical Action introduced the training of paravets 2-3 years after the training of Village Extension Agents. There is a large group of VEAs trained 4-5 years ago who are well established practitioners. In the case of paravets, over 50% have been active for three years or less so it is still early to assess the impact and sustainability of their activities.

In terms of motivation for taking the training in the first place, 27% mentioned gaining income, 62% were motivated by the prospect of gaining new skills (in the questionnaire the respondents had the opportunity to mention more than one motive) Gaining personal social standing was a very marginal motivation (5%) compared to the sense of obligation to serve the community (67%).

At the end of the training 70% of extensionists received equipments, 50% received inputs and supplies, 27% received seeds, and only 7% said they received nothing. A high number 56% received other types of support including a donkey, or donkey and carts and, uniquely in Practical Action, a *cash incentive*. The issuing of cash incentives for both VEAs and paravets was a Village Development Committee decision.

Did s/he participate in any exchange visits?

	Agricultural extension	Paravet	Total
No	19 67.9%	12 50.0%	31 59.6%
Yes	9 32.1%	12 50.0%	21 40.4%
Total	28 100.0%	24 100.0%	52 100.0%

Less than half of VEAs/Paravets had been given the opportunity for an exposure visit, the proportion being higher in other Practical Action countries. Given its clear benefits in subsequent practice, as all those who had the opportunity deemed it to be useful or very useful it would be worth extending the exchange visit programme within the training.

Has s/he been involved in training other extensionists?

	Agricultural extension	Paravet	Total
No	11 39.3%	15 78.9%	26 55.3%
Yes informally	8 28.6%	4 21.1%	12 25.5%
Yes Formally	9 32.1%	0 .0%	9 19.1%
Total	28 100.0%	19 100.0%	47 100.0%

The VEAs become more involved in training new and future VEAs than is the case with Paravets. It has even been possible for 9 VEAs to train other individuals to a level where they can also be accepted as VEAs by the local VDC. This suggests that the format and approach in VEA training is more flexible with knowledge spreading more freely, whereas the veterinary authorities exercise a tighter control over the Practical Action training curriculum.

Appraisal of Training by the VEAs

The balance between theory and practice was considered good, because the theory is provided and the trainees immediately go and practice. The whole Practical Action technical package has been useful: diversification of production, use of terraces to alleviate labour burden and cultivate more area; water harvesting – training on terrace layout and construction. Pest control including training on IPM has made different options available.

All subjects have proven relevant and important. Some of the names of the pesticides are difficult to remember – the VEAs requested more training and awareness on pesticides.

The certificate is important for recognition. It enabled VEAs to get in touch with the Ministry of Agriculture, to obtain inputs from the FAO, and get invited for upgrading training.

Appraisal of Training by Paravets

The most important demand for the services for which paravets were trained is on the treatment of sick animals. For example during the study visit the paravets were dealing with an outbreak of *hemorrhagic septicaemia*. Treatment for worms is constantly maintained. In the area of range and pastureland management this aspect of the training was of less use because the community members are skilled in this already, which means there is no demand. Dairy production training has not been applied yet as the environment is becoming harsh for dairy cattle. Also hides and skins production training has not been used: as the prices are very low, this is not profitable. A general comment on the training is that it is not long enough to learn the whole subject. Requests for further training include practical training for cheese making and also training in laboratory practice: how to check specimens.

The certificate is important as the people can recognise the paravet as a special person, differentiated from all the rest. Sometimes officials come across them in the field when they are practicing and challenge them, but when officials are shown the certificate they are satisfied.

Vaccination campaigns are organised by NGOs, there are three campaigns per year, and the Practical Action trained paravets that participate in the campaigns get a *per diem*. FAO is providing vaccines and syringes. The government is banning access to all live vaccines. The main argument is that they need special handling. If paravets were provided with ice boxes they are confident they can do the job. The main problem is lack of ice boxes and ice production.

6.2 Coverage

Fifty-five percent of extensionists give service by taking a regular route around the village, so that people know when and where the service will be available. Only 18% specifically make visits in order to sell inputs. It is more common for information and inputs to be exchanged in the market (49%) or in other social and religious ceremonies, or in the case of paravets at water points whilst the animals are gathered. 14.5% offer consultations over the phone and 40% of paravets are always available to attend emergencies. The only major difference between the VEAs and the Paravets is that it is more common for the Paravets to give services in the market place.

Have you attended to the farmers in the market place?

	Agricultural extension	Paravet	Total
No	19 67.9%	9 33.3%	28 50.9%
Yes	9 32.1%	18 66.7%	27 49.1%
Total	28 100.0%	27 100.0%	55 100.0%

No. of villages covered

	Agricultural extension	Paravet	Total
1-4	7 25.0%	6 23.1%	13 24.1%
5-7	17 60.7%	11 42.3%	28 51.9%
8-10	3 10.7%	5 19.2%	8 14.8%
11-20	1 3.6%	4 15.3%	5 9.3%
Total	28 100.0%	26 100.0%	54 100.0%

A clear mode in the number of villages covered by VEAs and Paravets is 5 to 7 villages. This corresponds to the settlement pattern in Darfur which is in clusters of 5-7 villages, which is a logical and natural coverage area. More paravets than VEAs have a wider service area than this, with 9 paravets covering 8 or more villages compared to 4 VEAs. This is confirmed in the question on distance travelled with less than 20% of extensionists going further afield than 10km from their home to provide a service.

Highest distance covered by extensionist

Km	Agricultural extension	Paravet	Total
0-4	11 40.7%	7 26.9%	18 34.0%
5-9	12 44.4%	13 50.0%	25 47.2%
10+	4 14.8%	6 23.1%	10 18.9%
Total	27 100.0%	26 100.0%	53 100.0%

The furthest away clients are on average only attended every three to four months, again confirming the locality of the service. In some countries in the sample, around 10% of paravets are covering 30-40 villages, but this unlikely to happened in Sudan, where the paravet is slightly more mobile than the VEA, but the maximum time spent travelling to attend a client is, on average, less than two hours. This is due to transport constraints and the settlement pattern, which is of clusters of 5-8 villages separated by wide expanses of desert and semi-desert, it is impractical for service providers to move further afield than their home area.

Time required to reach furthest client (Hour).

	Mean	Maximum	Minimum
Agricultural extension	1.8173	5.00	.50
Paravet	2.7130	10.00	.50
Total	2.2736	10.00	.50

Most extensionists (90%) reach their clients by donkey, with 25% sometimes walking.

Inputs and Supplies

This section contains the most striking and significant difference with the context and situation on other Practical Action experiences, and that is the overwhelming presence of NGOs and UN bodies as providers of agricultural and livestock inputs on a humanitarian, aid basis. This is clear from the response that the extensionists give: that generally they do not pay for these inputs.

This may not be surprising but it means that issues relating to long term sustainability cannot easily be gauged. At the moment VEAs and paravets are a very effective means of reaching poor and vulnerable farmers with vital services and inputs for the agricultural cycle.

Inputs from other Extensionists		
	Agricultural extension	Paravet
Gets inputs from other extensionist	6	4
Pays for supplies from other extensionists	1	3
Experiences difficulties of supplies from other extensionists	Sometimes – 5 Often – 1	Sometimes–2 Never – 2

Inputs from Government		
	Agricultural extension	Paravet
Get inputs from Government	9	5
Pays for supplies from Government	0	3
Experience difficulties of supplies from Government	Sometimes – 6 Often – 1	Often -2 Sometimes–1 Never – 1

Inputs from NGO/UN		
	Agricultural extension	Paravet
Get inputs from NGO/UN	27	20
Pay for supplies from NGO/UN	4	3
Experience difficulties of supplies from NGO/UN	Often -8 Sometimes – 10 Never – 8	Often-4 Sometimes–11 Never – 2

Inputs from shop		
	Agricultural extension	Paravet
Get inputs from shop	4	10
Pay for supplies from shop	4	10
Experience difficulties of supplies from shop	Often -2 Sometimes – 1 Never – 1	Often-2 Sometimes–3 Never – 2

Technical Aspects

The paravets surveyed offer the following technical services:

- ⇒ Unpaid advice provided by all paravets: diagnosis, pasture management, fodder, breeding, quarantine of sick animals, information on prices and market demand
- ⇒ Vaccination, 60% of the sample do not charge the livestock owners, they receive a *per diem* from the UN or humanitarian agencies for this work. Vaccination work is done once a month on average.
- ⇒ Livestock drugs these are charged with a mark-up – livestock medicine is the main earning opportunity for paravets and these are administered 15-30 times a month.
- ⇒ Small operations – 60% of paravets charge for this.
- ⇒ Services offered by a small minority of paravets – calving, insemination, provision of breeding stock. These are generally unpaid.

VEA services are as follows:

- ⇒ Unpaid advice provided by all VEAs: crop disease diagnosis, advice on prevention of soil erosion, ploughing, pest management, soil fertility, terracing, weeding, agro forestry, seed varieties, seed storage, hibiscus growing
- ⇒ 50% of the VEAs sampled provided advice on chemical fertilizers.
- ⇒ Unfortunately information on payments or otherwise to VEAs for agricultural inputs is missing from the survey – from other parts of the survey, we note that 60% of VEAs gain some income from their work on seed sales and tool hire.

Innovations

Approximately 25% of both VEAs and paravets claim to have developed practices that are innovative in the local context. Examples:

- ⇒ *Before autumn I start to grow saplings from the watermelon seeds and with rainfall I plant onto plot, to ensure early crop harvest than traditional method*
- ⇒ *Curing with natural herbal medicine: mouth ulcer is treated with acacia fruits*
- ⇒ *Pest control with local pesticide, Neem tree leaves especially (mentioned by 3 VEAs)*
- ⇒ *Using animal dung to fumigate her land to control some pests affecting watermelon*

- ⇒ *Improving breed of goats - from locally breed to Nubian*
- ⇒ *Introduce cultivation of two crops (okra & beans) in the village for first time*
- ⇒ *Mixture of red pepper and garlic to be used for insect control*

Appraisal of technical aspects by Paravets

The paravets' own view is that they are playing an important and crucial role in El Fasher rural. The government have no vehicles and are constrained by the security situation. The paravets can provide the service much more quickly. He/she is the first on the scene and can notify the government veterinarians about the problem. Time is important for controlling and outbreak. It is difficult for an owner to drive animals into El Fasher for treatment; whereas the paravet collects the vaccine from El Fasher. The paravets can link the Veterinary Department with the people, reflecting what they see in the field, and this will prompt the suitable response.

In the group discussion, individual paravets were also interested to share some dramatic success stories, for example:

One day a man brought a donkey with a wounded belly, the bowel had come out and even part of the intestine was injured. The paravet did the operation: sutured the bowel and the wound. The donkey survived and is back to health.

One day a horse was taken to the vet hospital in El Fasher, the horse received many injections but did not improve. In this case the paravet resolved the problem by discovering a rotten tooth!

Appraisal of technical aspects by VEAs

According to the VEAs, the most difficult aspect of their work is pesticides; judging the right dosage which deals with the problem but without damaging environment or health. Laying out and construction of terraces is also complex. They know their work is effective by asking farmers about their production levels compared to previous seasons. There are many examples of rapid adoption and innovation by farmers following on from the advice of VEAs:

One farmer immediately split his farm into four plots and managed to triple his income in one season

One non-pesticide control measure involves the grinding of neem seeds and powdering the plants. One of the farmers extracted oil from the neem seed and made a solution to be sprayed on the plants – this was more efficient and effective against white fly.

The following aspects have been ineffective and the VEAs expect Practical Action to resolve these problems:

Some of the ploughs are not good quality. Practical Action office has offered to change them but this problem has not been resolved.

The FAO hoe is not good, very small, but no alternative has been offered.

The FAO provided them with water melon seeds, Charleston variety. The flesh has a white-ish colour which is not favoured in the market.

These responses show clearly that the VEA system is highly dependent upon the technical back-stopping of outside institutions, especially Practical Action.

Payment

There are 15 VEAs, 60% of the sample, who are completely voluntary and never receive payment of any kind for their services, but only 2 paravets, 8% of the sample are in a similar position. Where charges are made, the main form of payment is cash, only 2 VEAs and 1 paravet have been paid in kind with crops or animals.

Do you receive any payment for services?

		Do you receive any payment for services?		
		Agricultural extension	Paravet	Total
Yes		10	23	33
		40.0%	92.0%	66.0%
No		15	2	17
		60.0%	8.0%	34.0%
Total		25	25	50
		100.0%	100.0%	100.0%

Do clients typically pay you with cash?

		Agricultural extension	Paravet	Total
No		13	2	15
		52.0%	8.0%	30.0%
Yes		12	23	35
		48.0%	92.0%	70.0%
Total		25	25	50
		100.0%	100.0%	100.0%

Appraisal of payment issues by Paravets

In discussion the paravets agreed that they apply similar principles on payment issues. If someone gets treatment for an animal and they do not pay, even though they can afford to, then they do not get any more service. A poor household gets free treatment even if they come a second time. If the poor man brings an in kind payment that is acceptable, if not they will be pardoned from making a payment. The treatment of the poor for free is a cost assumed by the paravets themselves, the number who do not pay is very few and it does not affect the overall sustainability of the service. When the Village Development Committee comes to check the drug sales, the paravet normally has to find the money if he/she has given any free treatments, in order to make up the difference in the revolving fund.

Appraisal of payment issues by VEAs

Village Extension Agents keep records on the farmers; if they do not pre-pay the seeds they will not get seed or other services in the future. Sometimes the Village Development

Committee management deals with the issue. If there is a very good reason for non payment that is acceptable, otherwise the local leaders will intervene.

Villagers' appraisal of community extension services.

The household survey on the impact of food security interventions included a set of questions on the availability, affordability and relevance of the services provided by VEAs and paravets.

Availability of community based extension.

Ninety-eight percent of respondents in project villages reported that a VEA was available to them, and 82% said that they had received services from them. In the case of availability of a community based paravet, 94% reported availability and 80% had used their services. Frequency of use during the past month averaged at 2.6 times for receiving any kind of service from the VEA (range was 0-15) and 3.9 times for receiving any service from the paravet (range was 0 to 36 times). Ninety one percent of respondents report no problems with the services provided by either kind of community extensionist.

In terms of households' preferred source of information and inputs for both crop and livestock production, there has been a notable shift towards preference for the VEA or paravet once they became available in the community. There has also been a dramatic reduction in the number of respondents stating that they had no source of information or inputs at all (see tables below).

For respondents from the control village, the principal source of information for crops and vegetables is other farmers and for inputs are shops or dealers. Neither government staff nor community extension staff is mentioned in either case. In the case of livestock around 26% of control respondents are accessing information from government, but around 30% have no source of information at all.

Households' preferred sources of information and inputs for crops/vegetables

			Preferred sources for crop/vegetables							
			Govt. extension worker	CBE/RC E	Others farmers	Shop/de alers	NGOs	No sources	Don't know	Others
INFO	Before	Count	7	4	46	10	2	18	0	7
		%	7.2%	4.1%	47.4%	10.3%	2.1%	18.6%	.0%	7.2%
	Now	Count	6	75	1	0	12	2	0	0
		%	6.3%	78.1%	1.0%	.0%	12.5%	2.1%	.0%	.0%
INPUTS	Before	Count	5	5	21	40	2	8	1	16
		%	5.1%	5.1%	21.2%	40.4%	2.0%	8.1%	1.0%	16.2%
	Now	Count	5	68	2	6	15	0	0	2
		%	5.1%	68.7%	2.0%	6.1%	15.2%	.0%	.0%	2.0%

Households' preferred sources of information and inputs for livestock

			Preferred sources for livestock								
			Govt. extens. worker	CBE/RC E	Others farmers	Shop/ dealers	NGOs	No sources	Don't practice	Don't know	Others
INFO	before	Count	26	4	14	5	2	18	5	13	7
		%	26.3%	4.0%	14.1%	5.1%	2.0%	18.2%	5.1%	13.1%	7.1%
	now	Count	10	61	1	0	17	1	3	1	1
		%	10.1%	61.6%	1.0%	.0%	17.2%	1.0%	3.0%	1.0%	1.0%
INPUT	before	Count	26	4	3	20	3	20	4	4	11
		%	26.3%	4.0%	3.0%	20.2%	3.0%	20.2%	4.0%	4.0%	11.1%
	now	Count	6	75	1	0	12	2	0	0	0
		%	6.1%	75.8%	1.0%	.0%	12.1%	2.0%	.0%	.0%	.0%

Households' preferred sources of information for markets and food processing

			Preferred sources for market and food processing								
			Govt. extensn worker	CBE/RCE	Others farmers	Shop/dealers	NGOs	No sources	Don't practice	Don't know	Others
MARK ET	before	Count	0	3	39	23	3	7	3	5	16
		%	.0%	3.0%	39.4%	23.2%	3.0%	7.1%	3.0%	5.1%	16.2%
	now	Count	0	21	34	12	8	2	3	3	16
		%	.0%	21.2%	34.3%	12.1%	8.1%	2.0%	3.0%	3.0%	16.2%
FOOD	before	Count	0	0	0	11	1	19	20	31	7
		%	.0%	.0%	.0%	11.3%	1.0%	19.6%	20.6%	32.0%	7.2%
	now	Count	0	2	0	0	22	8	18	24	17
		%	.0%	2.1%	.0%	.0%	22.7%	8.2%	18.6%	24.7%	17.5%

With respect to the rating of relevance and availability of services from community service providers as compared to government services, community service providers fare very well.

Project households' rating of relevance of community agricultural extension and government agricultural extension service

		Good	Average	Not good	Total
Extension service					
Community: relevance	Count	82	9	1	92
	%	89.1%	9.8%	1.1%	100.0%
Community: availability	Count	69	22	1	92
	%	75.0%	23.9%	1.1%	100.0%
Government: relevance	Count	13	4	5	22
	%	56.5%	17.4%	21.7%	100.0%
Government: availability	Count	12	3	7	22
	%	52.2%	13.0%	30.4%	100.0%

Project households' rating of relevance of paravet and government veterinary extensionist service

		Rate relevance of extension service			Total
		Good	Average	Not good	
Extension service					
Community: relevance	Count	76	8	2	86
	%	88.4%	9.3%	2.3%	100.0%
Community: availability	Count	70	13	1	84
	%	83.3%	15.5%	1.2%	100.0%
Government: relevance	Count	16	4	3	23
	%	69.6%	17.4%	13.0%	100.0%
Government: availability	Count	16	4	3	23
	%	69.6%	17.4%	13.0%	100.0%

Households are quite rarely paying for information from VEAs, in the case of payment for inputs a range of responses were reported with the majority reporting payment either sometimes or always (see tables).

Do households pay for crop information and inputs from VEA or paravet

		Do you pay?			
		Always	Sometimes	Never	Total
VEA: info	Count	6	9	84	99
	%	6.1%	9.1%	84.8%	100.0%
VEA: Inputs	Count	32	41	25	98
	%	32.7%	41.8%	25.5%	100.0%
Paravet: info	Count	8	5	85	98
	%	8.2%	5.1%	86.7%	100.0%
Paravet: inputs	Count	42	23	31	96
	%	43.8%	24.0%	32.3%	100.0%

Main challenges to sustainability

Appraisal of challenges by Paravets

There is no association of paravets. The formation of such an association would be valuable for exchange of ideas, experiences. They could organise medicines and equipment, able to contact government for support in a more organised manner. They could increase their skills on use of computers and access new fields of vet work. The main challenge to the work of the paravet is that the capital is small. They have to come to El Fasher every week, so most of their profit is used up in transport costs. Women paravets do not face any particular barriers. They are more likely to drop out due to marriage as they may move to town if husband is based there. **The security situation has been an advantage for the paravets** – they have been given special permission to practice injections unsupervised by official vets, a chance to prove their capabilities.

Appraisal of challenges by VEAs

When VEAs go individually to report pest outbreaks and request government vehicles, they invariably refuse. The only way to secure that support is to send a delegation from the village to corroborate what the VEAs are saying. There is still a gap in trust .

Collaboration between VEAs is mainly on pest control, campaigns involving neighbouring villages are coordinated. Some VEAs maintain demonstration farms – other VEAs are invited to come and learn. They would like a VEA Net, the advantages would be to establish good linkages with relevant service providers, more access to refresher training, and pressing for transport support from village to town and for regular visits to neighbouring villages.

Sometimes there are lazy VEAs. If so the community fires them and nominates a new person to be trained in the future. Sometime VEA women get married and move to another community. Some women need an incentive; there is a lack of incentive to continue working. VEAs normal work in pairs, a man and a woman, any traditional barriers between men and women can be avoided. Limitations of the security situation hit in 2004-6, limiting the service area, but this is no longer a problem.

6.3 Sustainability and Motivation

The key finding from this survey is that the practice of community extension is sustained through a combination of social solidarity and humanitarian resources allocated by NGOs and the United Nations. Most of the inputs for agriculture and drugs for animals are free or highly subsidised. *Therefore the picture that we have is of a decentralised service network which is making a valuable contribution to sustaining village life in a context of insecurity and militarisation.* The provision of agricultural and livestock inputs as part of the humanitarian effort in Darfur makes it difficult to know how sustainable the practice might be once such inputs are no longer available and the community extensionists need to adopt a more entrepreneurial approach deriving their inputs from private traders at market prices. The paravets have better prospects of becoming full independent self employed service providers. Currently, when paravets visit El Fasher to purchase drugs they are unable to make what they regard as a worthwhile profit due to the cost of transport. We can speculate that once the security situation normalises, the number of transport providers and decentralised private stockists will increase, reducing costs and making private paravet services more viable. The majority of VEAs, on the other hand, will continue to work giving a free service to the community with occasional incentives and stipends as their local Village Development Committees deem appropriate.

Currently in Sudan there is no legislation or guidelines are covering the services of paravets, and this is an area where Practical Action could undertake useful policy. (Interview, Ibnoaf) Practical Action could stimulate state level lobbying with the federal ministry to issue new guidelines. Paravets unrecognised in the local government system and yet they are providing a public service not provided by the government. If the policy review is the exclusive responsibility of veterinarians then it is possible that the status quo will be maintained. The private sector could be a future ally, as paravets can build up presence of the private sector in remote areas, as they act as veterinary drug distributors.

PART III – Discussion, Conclusions and Recommendations

This study aimed to assess experience and impact in five possible key areas of food security related intervention, as outlined in the introduction:

1. **Access to appropriate skills and technologies** for more sustainable and diversified production.
2. **Empowerment of communities** to determine their own future as well as to access and influence institutions and decision making process.
3. **Strengthening access to, and have control over, natural resources** by farmers, livestock keepers, fisherfolk and the landless poor.
4. **Equitable access to food and labour markets** through strengthening production, food processing and human skills for sale in order to obtain some cash income.
5. **Reducing vulnerability to disasters, both short and long term, including climate change** through strengthening livelihoods, improved hazard analysis, hazard mitigation, disaster preparedness and planning, and adaptation to climate change.

It aimed to see which of these areas were being addressed and how, at the local and meso levels, to assess the impact on local level food and livelihood security, and to consider the extent to which they were contributing towards a policy framework of Food Sovereignty.

The project did not actively aim to cover all of the five aspects, but rather focused principally on access to skills and technologies for production and empowerment of communities. There were elements which strengthened access to food and labour markets, and vulnerability to drought was reduced principally through improved production, storage and diversification, rather than through hazard analysis and mitigation, preparedness and planning.

In terms of providing access to appropriate skills and technologies for sustainable and diversified production the project focused strongly on a limited range of technologies which had proven successful in past projects, namely terrace layout, plough use, seed multiplication, pest control, seed and tool storage, animal husbandry, and earth dams. There were all reported as beneficial – the plough, seeds and terrace combination in

particular were reported as contributing significantly to increase production and security. The delivery of these technologies and skills via training with the long term support of the Village Extension Agents has also been both successful and sustainable – a large proportion of these agents still practicing now and providing a valuable service.

In the case of paravets, they have been permitted by the Animal Resources authorities in Darfur to administer vaccines without the supervision of a government vet. This is a significant relaxation of the stringent controls on the administration of vaccines, brought about by the inability of government staff to move in the rural areas for fear of being targeted by rebel groups. The paravets trained by Practical Action are now confident that they can handle live vaccines. This is still not permitted, but as an issue has yet not been tested as the paravets do not have the correct cooling equipment. It will be necessary to find a consensual way for the paravets to continue to expand their skills and to make strong case for the former restrictions not to be re-imposed, given the sound track record of the North Darfur paravets during the security crisis.

Both VEAs and Paravets would benefit from their own sub-associations to be able to lobby specifically on recognition, regulations and integration with government service providers.

The other key area of impact was in empowering communities of rural producers to be able to plan and manage development activities and improve the representation of women and the poor in local decision-making. In this area the sustainability of VDCs and WDCs and the support networks that have been established has been highly successful. Giving the committees skills, resources and a clear purpose has ensured that they were able to fill a valuable role in the community which has contributed strongly to their sustainability. These committees effectively managed project activities and many have gone on to undertake and complete their own initiatives.

But to what extent have these very localised activities created spaces for accessing resources and influencing policy and practice of other institutions at the meso level? The VDC and WDC networks, albeit with considerable and continued 'handholding' from Practical Action have been successful in collaborating with other NGOs and international agencies to access resources. This is in part due to what might be considered a favourable environment in which those agencies are actively looking for suitable entry points to working in conflict affected communities, as the need to continue to invest in IDP camps has reduced.

Practical Action, as one of the only implementing NGOs which has continued to work in non-camp communities throughout the period of conflict, is well positioned to play an important role in influencing these agencies towards its proven technologies as well as the local CBOs which can manage funds. The regional manager has taken this opportunity and engaged actively, both formally and informally, with both non government and government stakeholders to influence plans for the rebuilding of agriculture in the region.

During the research period it was not possible to ascertain the extent of Practical Action's influence on government or NGO / international agency policy. An interview with an EC delegation representative showed that they have an interest in our technologies and stronger evidence of their impact and sustainability. There is a particular demand for evidence of the impact of water harvesting dams, and specialised technical, social and environmental studies of the existing dams which was beyond the scope of this study, these detailed studies of dams are being commissioned under the Greening Darfur project. Separately, Dr Ignoaf also indicated that Practical Action is very well placed to undertake advocacy work on the para-veterinary service model and that as a government insider he would be willing to facilitate such lobbying at the highest level.

Internal recommendations – Practical Action

It is essential to engage with policy makers and other stakeholders, share our experiences, and have some influence on their practices, especially if there is a favourable context currently for government listening to outside voices on these issues. This is one of the ultimate aims of the process during the strategy period.

The next stage in the process is an internal workshop to engage our own staff in thinking about what messages they want to put across to policy makers and exactly what change we would hope to see. Then, on the basis of the information we have (and other information that can be drawn in from other projects including Aim 2) take a strategic approach to achieving that change. Those messages might relate to our broad approach to food security directed at NGOs and donors as well as government, or they might relate to specific changes we would like to see in extension policy (also relevant to Aim 2).

Another agenda for the workshop to consider is the need to discuss the weaknesses as well of the strengths of the research for this report to build collective understanding on gathering evidence to continue make our case. If somebody involved in a field survey does not fully grasp the meaning of the question they are asking and why they are asking it, i.e. what hypothesis it is contributing to - then it may lead to information being recorded anomalously. This was a huge risk of the way the research was undertaken so ambitiously in such a short time - we want to learn from this as a stepping stone towards better monitoring and evaluation.

References

- ITDG (2002) Re-establishing Food Self Reliance in Darfur, EC Proposal. Report 21001015.
- Martin, Adrienne (2005) Review of ITDG's Food Security work in Darfur, March 2005, Natural Resources Institute, University of Greenwich
- Shazali, M. E. H. (1999) Household – Village Food Grains Storage in Northern Darfur State, Sudan. Commissioned by Practical Action Sudan, April 1999.
- Young, H., Osman, A.M.K., Aklilu, Y., Dale, R., Badri, B., and Fuddle, A.J.A. (2005) Darfur – Livelihoods Under Siege. Feinstein International Famine Centre, Tufts University, Medford, MA. USA

7 Annexes

Annex 1 - Darfur location maps



Annex 2 Project Logical Framework.

<i>Project Logframe</i>	<i>Indicators of achievement</i>	<i>Means of verification</i>	<i>Assumptions/Risks</i>
<p>Goal Reduced poverty and vulnerability to drought of poor food producer households in North Darfur</p> <p>Project Purpose Poor women and men food producers in North Darfur able to re-establish and advance their capacities for self-reliance and mitigate recurrent drought through the sustainable and productive management of local resources</p>	<ul style="list-style-type: none"> • Disposable household income • Household asset base, in particular animal ownership • Household food production, quantity, type, seasonality • Seasonal displacement and out-migration rates (men/women) • Access to water - time spent on collection and cost • Changes in prices obtained for local produce • Community qualitative perceptions of poverty status • Range of skills of community members (human capital) • Income spent on education and health (total/proportional) • School attendance rates • Changes in diversity of livelihood strategies • Changes in terms of access to natural resources and land • Cash crop cultivation as proportion of total cultivated area • Community investment in physical resources • Leverage of poor through within institutions and government • Community implementation of drought alleviation plans • Implementation of environmental action plans • Access to fuel (quantity, quality, time) • No. of women and women headed households in women's groups and VDCs • Gender of community leaders and representatives • Changes in women's access to credit, ploughs, tools, water • Changes in women's food processing/storage practices • Changes in women's disposable income • Changes in intra-household distribution of resources and decision making roles • Changing nutritional and water sanitation practices 	<p>Independent evaluations</p> <p>PME Annual reviews</p> <p>Feedback from partners</p> <p>VDC and Group action plans</p> <p>VDC and Group annual 'LEGS' reports</p> <p>ITDG quarterly monitoring reports</p> <p>ITDG annual 'POEMS' reports</p> <p>VDC and Group quarterly monitoring reports</p> <p>VDC environmental action plans</p> <p>Project and Group records</p> <p>Baseline survey</p>	<p>Ethnic conflict limited</p> <p>Rainfall sufficient to maintain groundwater recharge</p> <p>Rainfall sufficient for basic crop production</p> <p>Continued stable policy environment</p> <p>Links to wider markets with continued policy support</p> <p>Voice of civil society increasingly recognised</p>

<p>Expected Results</p> <p>1. Rural farm-producer organisations will be able to plan and manage development activities, mitigate the impacts of drought, and improve the representation of women and the poor in their decision-making</p>	<ul style="list-style-type: none"> • Number of VDCs working in localities • Numbers of VDC members • Number of VDCs joining to form and register as CBOs • VDC/CBO lobbying events for resources and other interventions from NGOs, private enterprise, local authorities and government line departments (type, request, response) • Changing participation and attendance of poor households and women at committee-level • Number of women leaders • Changes in time of poor households used for human and social capacity building 	<p>Internal and external evaluations</p> <p>PME quarterly reviews</p> <p>Feedback from partners</p> <p>VDC and Group monthly and quarterly monitoring reports</p> <p>ITDG quarterly monitoring reports</p> <p>Project and Group records</p> <p>Baseline survey</p>	<p>Ethnic conflict limited</p> <p>Rainfall sufficient to maintain groundwater recharge</p> <p>Rainfall sufficient for basic crop production</p> <p>Continued stable policy environment</p> <p>Links to wider markets with continued policy support</p> <p>Trader interest in market development with small producers</p>
<p>2. Poor small farmers will achieve higher food and cash crop outputs in both normal and drought years</p>	<ul style="list-style-type: none"> • % change area of staple and cash crop cultivation • % change in output per unit area (food and non-food products) • Change in use of off-season cultivation of wadi areas, • Numbers of earth dams built and area used for flood-farming • Number of shallow wells and area of irrigated production • Farmer access to and knowledge of market demands/prices • Changes in sale vs. crop storage practice • Changes in average prices secured for unprocessed products • Change in area cropped with terraces • Comparative allocation of farm area to wadi vs. goz cultivation • Change in sale of legumes and vegetables • Seed show events and attendance • Uptake and use of ploughs and other tools (numbers) • Time allocated by women for cultivation and weeding • Change in varieties and species planted (area and production) • Changing source of agricultural knowledge and information • Extension and training events attended and uptake of ideas • Blacksmith-farmer community trade of tools (volume/value) • Blacksmith trade with metal suppliers (volume/value/terms) 		

<p>3. Rural communities will gain greater access to potable water by developing locally financed and managed water management and delivery systems</p>	<ul style="list-style-type: none"> • Time spent collecting water per day • Average quantity of water available at household level • Number of villages with donkey cart water deliveries • Income earned vs. loan repayments for donkey carts • Numbers of water sanitation training events and attendance • Qualitative evidence of changing water behaviours • Number of haffirs dug, and numbers benefiting • Changes in the water sources used by season by wealth • Decision support tools provided to water service agencies 		
<p>4. Women will generate more income by increasing their capacity to store, process and market agricultural and non-food products</p>	<ul style="list-style-type: none"> • No. demonstration household grain stores • No. improved stores constructed by communities • No. community grain stores constructed • No. households selling into and purchasing from stores • Training events in post harvest processing (No./attendance) • Foods processed (type, quantity, quality) • Foods sold vs. stored and consumed (volume/value) • Participation of blacksmith women in pottery sales (no., type) • Marketing events (quantity, quality, revenue, market type) • No. Women's marketing groups formed • Producer-market trader linkages formed • Market information access by producers (type, quality, timing) • Uptake of recommendations from market assessments 		

Annex 3: Research Tools

HOUSEHOLD QUESTIONNAIRE - SUDAN

Identification of Household	
Name of Respondent _____	
Name of Village _____	<input type="text"/> <input type="text"/>
Name of District / locality _____	<input type="text"/> <input type="text"/> <input type="text"/>
Household Code	<input type="text"/> <input type="text"/> <input type="text"/>

To be completed by Interviewer	7.1.1.1 Date of Interview
Name of Interviewer _____	Day <input type="text"/> <input type="text"/>
Signature _____	Month <input type="text"/> <input type="text"/>
Comments:	Year <input type="text"/> 2 <input type="text"/> 0 <input type="text"/> 0 <input type="text"/>

Introduction to interviewee

Hello, I work for Practical Action. Your community benefited from a project between 2002 and 2006. We want to learn about which aspects of the project had most benefit for you and other community members and which had least benefit so that we can continually improve our projects in the future.

I will ask you some questions about your participation in the project and what impacts it has had on your production and other aspects of your life. Please feel comfortable to give an honest answer, even if you experienced any problems or did not decide to adopt any aspect of project training. We need to know if there were challenges as well as successes in order to improve!

A HOUSEHOLD PROFILE

[A1] Are you the head of the household?

Yes 1	No 0
----------	---------

If no what is your relationship to the household head?

Now I would like to ask you some general questions about your household members.

Lets start with yourself (i.e. the person named)

Line No.	Age <i>(write age in completed years)</i>	Male/ Female <i>(circle one)</i>		ARE you able to read and write <i>(adults)</i>		Number of classes of formal education <i>(not khalfa)</i>	Attending school now (for children only?) <i>(circle one)</i>	
(A2)	(A3)	(A4)		(A5)		(A6)	(A7)	
01 <i>(interviewee)</i>		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
02		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
03		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
04		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
05		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
06		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
07		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
08		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
09		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
10		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
11		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
12		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
13		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
14		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
15		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2
16		Male 1	Female 2	Yes 1	No 2		Yes 1	No 2

(A8) Are you still a member of the same household as you were when you participated in this project?

Yes 1	No 2
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(A9) Are you a permanent resident of this village or an IDP?

Permane nt 1	IDP 2
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B. AGRICULTURE / PRODUCTION CAPACITY BUILDING DURING THE PROJECT

I would like to ask you about any agriculture or production training or support you or any members of your household have received **since 1998**, either through the Practical Action project or from another provider (NGO, government. Please tell me if you have received any of the following training from this list. If I don't mention a training you have received then please tell me what it is.

Did you implemented or benefit from any of the following activities since 1998	Circle those relevant	Who provided the training or support to this activity? (see codes)	Do you still practice this activity or benefit NOW?		OF those you did, rank the 3 most valuable to your household.
	(B1)	(B2)	(B3)		(B4)
Terrace layout and construction training	01		Yes 1	No 0	
Plough and harness use training	02		Yes 1	No 0	
Short mature seed multiplication training	03		Yes 1	No 0	
Pest control training	04		Yes 1	No 0	
Tree seedling training	05		Yes 1	No 0	
Food / agro processing training	06		Yes 1	No 0	
Training to be extensionist	07		Yes 1	No 0	
Training to be Paravet	08		Yes 1	No 0	
Goat restocking	09		Yes 1	No 0	
Donkey or donkey cart	10		Yes 1	No 0	
Grain bank service	11		Yes 1	No 0	
Revolving credit or drug fund	12		Yes 1	No 0	
Seed and tools store	13		Yes 1	No 0	
Hafir digging or improving	14		Yes 1	No 0	
Earth Dam	15		Yes 1	No 0	
Well / handpump	16		Yes 1	No 0	
Fuel efficient stove training	17		Yes 1	No 0	
Other*:	18		Yes 1	No 0	
Other:	19		Yes 1	No 0	

Other:	20		Yes 1	No 0	
Other:	21		Yes 1	No 0	
Other:	22		Yes 1	No 0	
Other:	23		Yes 1	No 0	

<p>*NB : Other training courses you could suggest might include pottery, blacksmithing, extensionist, paravet, etc. Please specify training in the box.</p>	<p>Codes: Who provided training or facilitation? 1 = Practical Action 2 = Other NGO or UN agency 3 = Government Extension agent 4 = Village Extension Agent / paravet 5 = Observed or learned from fellow villager 6 = Other</p>
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(B6) If you were trained or started some activity but no longer practice, why did you give up? *(write answer)*

--

(B8) Once you were practicing any of the skills you learned did you make any further changes or improvements in your practice as a result of your **own ideas**, in other words have you made any personal innovations? *(circle one)*

	Yes 1	No 0
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(B9) What changes or improvements did you make?

(write answer, asking for as much detail as possible)

--

(B10) What has been the ONE most significant improvement or impact to your agricultural production resulting from those skills you learned or inputs you received?

(Please get as much detail as possible, including which skill or change in practice the impact is based on)

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C. COMMUNITY EXTENSION

(C1) Is there a local agricultural extensionist or CAHW in your area who serves your community?

Extensionist 1	Paravet 2	Both 0	None 3
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(C2) If yes, have you ever received any information, services, advice or inputs from him or her? *(circle all relevant)*

Extensionist 1	CHW 2	Neither 0
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(C3) In the last 12 months, how many times did you receive information, advice or inputs from him or her?

Extensionist	CHW
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(C4) Have you ever experienced any problems in getting information, advice or inputs from the local extensionist / CHW?

Yes 01	No 02
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If yes, describe.

--

Apart any training discussed already, what is the most important day to day source of agriculture and livestock inputs and advice? If you get from more than one source, please give the most important or your preferred one.

Activity	Before project	In the last 12 months	
(C5) Inputs relating to crops or vegetables			Codes: Sources of advice 1 = Government extensionist 2 = local extensionist / paravet 3 = other farmers 4 = shop keepers / dealers 5 = NGO / UN agency 6 = no source of input or advice 7 = I don't practice 8 = I don't know 9 = other (specify)
(C6) Information on crop / vegetable production			
(C7) Inputs relating to livestock			
(C8) Information on Livestock			
(C9) Information about market prices generally			
(C10) Information about food processing			

For all questions: since the project began

(C11) Have you received any service on crop / vegetable from a **local extensionist**? If yes, please rate.

(C12) Have you received any service on crop / vegetable from a **government agent**? If yes, please rate.

(C13) Have you received any service on livestock from a **paravet**? If yes, please rate.

(C14) Have you received any service on livestock from a **government agent**? If yes, please rate.

Used		Relevance			Availability	
Yes	No	Good	Average	Poor	Good	Average
1	0	1	2	3	1	2
Yes	No	Good	Average	Poor	Good	Average
1	0	1	2	3	1	2
Yes	No	Good	Average	Poor	Good	Average
1	0	1	2	3	1	2

Do you pay for **inputs** from the local extensionist / paravet? I am just talking about inputs like seeds, drugs or vaccinations, not advice. (circle one)

(C15) Crops / vegetables etc

(C16) Livestock

Always	Sometimes	Never
1	2	3
Always	Sometimes	Never
1	2	3

Do you pay for **information** only from the local extensionist / paravet, when you are not paying for inputs, By information I mean skills, agricultural techniques or advice on how to apply drugs or fertilizers? (*circle one*)

(C17) Crops / vegetables etc

(C18) Livestock

Always 1	Sometimes 2	Never 3
Always 1	Sometimes 2	Never 3

D. HOUSEHOLD INCOME AND ASSETS

(D1) What type of house do you live in now?

(D2) What type of house did you live in before the project?

(D3) What grain storage methods do you use now (*circle all that are used*)?

(D4) What grain storage methods did you use before the project (*circle all that are used*)?

(D5) What is your principal source of lighting?

(D6) What was your principal source of lighting before the project?

Brick 01	Jallows 02	Straw 03
Brick 01	Jallows 02	Straw 03
Community grain store 01	Tukur 02	Matmoras 03
Community grain store 01	Tukur 02	Matmoras 03
Electricity generator 01	Kerosine 02	Solar 03
Electricity generator 01	Kerosine 02	Solar 03

What number of each of the following assets does your household currently own, and how many did the household own in 2002. **Enter the number of animals or items.** If none please enter 0.

	HOW MANY ?	NOW	Before project		HOW MANY ?	NOW	2006/2007	Before project
		(D7)	(D8)			(D7)		(D8)
	HOUSEHOLD				LIVESTOCK			
01	Radio			13	Cattle			
02	Clock			14	Sheep			
03	Television			15	Goat			
04	Bicycle			16	Donkey			
05	Phone (including mobile)			17	Camel			
06	Own donkey cart			18	Horse			
07	Motor vehicle			19	Chickens / poultry			
08	Number of huts				CROPS	Last 12	2006/ 2007	Before project
				20	Millet (bags 90kg)			

				21	Sorghum (bags 90kg)			
	FARM EQUIPMENT			22	Tomato (boxes)			
09	Plough			23	Watermelon (income SD)			
10	Pick axe			24	Karkadeh (guntar 100lb)			
11	Shovel			25	Okra (box)			
12	Sprayer			26	Tombac (guntar 100lb)			
				27	Total number of crops cultivated			
				28	Total muhamas cultivated			

(D9) Overall, has the productivity (yield per mukhamas) of your crops increased, decreased or stayed the same since before the project?

Increase 1	Same 2	Decrease 3	No crops 0
---------------	-----------	---------------	---------------

(D10) Please explain your answer.

--

(D11) Overall, has the health and productivity of your animals increased, decreased or stayed the same since before the project?

Increase 1	Same 2	Decrease 3	No animals 0
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(D12) Please explain your answer.

--

(D13) In general, as mortality of your animals increased, decreased or stayed the same since before the project?

Increase 1	Same 2	Decrease 3	No animals 0
---------------	-----------	---------------	-----------------

(D14) Please explain your answer.

--

(D15) Has your access to drinking water improved, got worse or stayed the same since before the project?

Improve 1	Same 2	Worse 3
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(D16) Overall, has the quality of your drinking water improved, got worse or stayed the same since before the project?

Improve 1	Same 2	Worse 3
--------------	-----------	------------

(D17) Please explain your answer.

--

E. COPING WITH DISASTERS

(E1) If there is a bad drought next year, do you feel that you will be more or less resilient to its effects now than you were before the project, or the same?

Yes 1	Same 2	No 0
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(E2) Please explain your answer.

--

(E3) Do you think you are better able to cope with the effects of the current conflict situation than you would have been without the project?

Better 1	Same 2	Worse 0
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(E4) Please explain your answer.

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F. FOOD SECURITY

	ON average how many times per week do or did you eat the following food items		In quantity per meal do you consume more, same or less NOW than before the project?		
	In the last 12 months	Before the project			
	(F1)	(F2)	(F3)		
01 Meat			More 1	Same 2	Less 3
02 Milk			More 1	Same 2	Less 3
03 Egg			More 1	Same 2	Less 3
04 Vegetables			More 1	Same 2	Less 3
05 Fruits			More 1	Same 2	Less 3
(F4) Now (i.e. over the last 12 months) do you consume more, the same or less number of different vegetables than before the project? (circle one)			More 1	Same 2	Less 3

(F5) If more, what are the new food items in your diet? (write answer)

--

(F6) How many months did you need to buy staple food from the market (to cover food deficit) in the last 12 months and before the project?

In the last 12 months	Before the project

G. COMMUNITY EMPOWERMENT

(G1) Has any member of your household been a member of a community organisation or committee within your village (circle all you are a member of)

VDC 1	WDA 2	Other 3	None 4
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(G2) If other, please name all (e.g. blacksmith association, water committee, etc)

--

(G3) What was been their role or involvement in those organisations? (describe all)

--

(G4) How does involvement in those organisations make a difference to your household?

--

(G5) Are women in your household participating more, the same or less in community decision making now that they were before the project?

More 1	Same 2	Less 3
-----------	-----------	-----------

(G6) If more, what impact has this had on the woman inside the household (positive or negative)?

--

H. SELF-ASSESSMENT OF HOUSEHOLD SITUATION

Considering all the questions discussed in this interview, how would you describe the situation of your household now and before the project?

Categories	During the past 12 months <i>(circle one)</i>	Before the project <i>(circle one)</i>
	(H1)	(H2)
DOING WELL – able to meet household needs by your own efforts, and <u>making some extra</u> for storing, selling for cash savings or for investing (e.g. in livestock or other assets, improving farmland, improving housing etc)	1	1
DOING JUST OKAY - able to meet household needs but with <u>nothing extra</u> to save or invest	2	2
STRUGGLING – managing to meet household needs, but by <u>depleting productive assets</u> and / or sometimes receiving support from community, government, NGO or UN	3	3
UNABLE TO MEET HOUSEHOLD NEEDS - <u>dependent on support</u> from community, government, NGO or UN	4	4

Assess from the response whether the interviewees situation has got better or worse over time.

(H3) Why has your situation got better / worse over time?
(write response)

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(H4) Can you tell me the **SINGLE** most important difference that the project made to your household or community?
(please describe in detail)

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LOCAL EXTENSIONIST / COMMUNITY HEALTH WORKER (CHW) QUESTIONNAIRE SUDAN DRAFT.

7.1.1.2 Identification of Extensionist / Paravet	
Name of Person Interviewed _____	<input style="width: 30px; height: 20px;" type="text"/>
Name of Village _____	<input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/>
Household Code	<input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/>

To be completed by Interviewer	7.1.1.2.1 Date of Interview
Name of Interviewer _____	Day <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/>
Signature _____	Month <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/>
Comments:	Year <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/>

1. EXTENSIONIST PROFILE

I would like to ask you a few questions about yourself...

1.1 Relationship to household head (write code)	1.2 Marital status				1.3 Age (write age in completed years)	1.3 Gender		1.4 Have you been to school		1.5 Years of school completed (write number or 00 if none)
See codes	Married 01	Single 02	Widow/er 03	Divorced 04		Male 01	Female 02	No 00	Yes 01	
Codes: Relationship to household head 01 = household head 02 = wife 03 = son / daughter of head or wife 04 = son-in-law / daughter-in-law of head or wife 05 = grandson / granddaughter of head or wife 06 = father / mother of head or wife 07 = brother / sister of head / wife 08 = other relative of head/ wife 09 = adopted 10 = non-relative / servant										

2. Training

2.1 What kind of extension training did you receive?	Agricultural extension 01	Paravet 02	Agriculture AND paravet 03				
2.2 How many days of Extensionist training have you received from Practical Action in total (including refresher training)	Enter number of days:						
2.3 Why did you decide to accept the training? <i>Circle as many as mentioned.</i> But do not prompt.	Income 01	Skill 02	Network 03	Social Status 04	Knowledge 05	Duty to community 06	Other 07
	Detail other:						
2.4 What type of material support did you receive immediately after the training? (Give examples) <i>Circle all mentioned, or no support if none was received.</i>	Paravet kit 01	Transport (donkey / cart) 02	Seeds 03	Agricultura l tools / equipment 04	Cash payment 05	Other 06 Detail below	No support 07
2.5 If other, what other type of support did you receive?							
2.6 Have you received any other Community Extension training from other organisations besides Practical Action.	No 00	Yes 01	If yes, please name of the training and organisation Did you pay for any of these courses yourself? (underline those that were)				
2.7 Did you participate in any exposure visits organised by Practical Action?	No 00	Yes 01	2.9 If yes, how useful was the exposure visit to your work		Very useful 01	Quite useful 02	Not useful 03
2.8 Have you been involved in training other local extensionist / CHWs?					NO 00	Yes informally 01	Yes formally 02

3. DROPPING OUT

3.1 After the training did you start working as a local extensionist / CHW?	00 No ⇒ Qn 3.2	01 Yes ⇒ Qn 3.3
3.2 If not, why not? (enter reason then thank the interviewee and end the questionnaire)		
3.3 If yes for how long have you been working? (Years)		
3.4 Are you still working now?	00 No ⇒ Qn 3.5	01 Yes ⇒ Qn 4.1
3.5 If no, why did you stop working?		
3.6 What would motivate you to start working again?		

If they never worked or if they stopped working after one year or less, then thank the interviewee and end the questionnaire here. Otherwise continue.

4. COVERAGE

4.1 How many villages do you cover with your service?	4.2 What is the distance to your furthest away client, in kilometres	4.3 How often do you provide a service to this most distant client	4.4 How long does it take to reach furthest client or for your client to reach you with which mode of transport.										
4.5 In what ways have you attended the farmers (if other please specify) <i>Circle as many as appropriate</i>		Regular visits around the village 01	Whilst selling inputs 02	In the market place 03	Farmer contacts you 04	Phone consultation 05	Emergency call out 06	Other 07	If other specify here.				
4.6 How much service do you give the poorest section of the community Ask respondent to choose one, without prompting. <i>If necessary discuss with CBE an example of a poorest family in the local context</i>				The poor are my priority for service 01			The poor and the non-poor get equal service 02			I prioritise those with more ability to pay 03			
4.7 What forms of transport do you use to reach the farmers? Circle as many as appropriate				Walk 01	Bicycle 02	Public Transport 03		Donkey 04	Other 05				
Please fill the following table with respect to your most recent year of service													
Year.....	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
4.8 Number of clients													
4.9 Tick Busiest months													
4.10 Average income													
4.11 How do the farmers typically pay you for the input or information? <i>Circle as many as appropriate.</i>					Never receive any payment 01	Cash 02	Payment in kind 03	Payment with labour 04	Other 05				
4.12 Please give examples of non-cash payments.													

5. TECHNICAL ASPECTS

	5.1 Do you provide this service?	5.2 Do you charge?		5.3 Frequency of operation per month		
Livestock Advice						
5.1.1 Diagnosis	No 00	Yes 01	No 00	Yes 01		
5.1.2 Pasture management	No 00	Yes 01	No 00	Yes 01		
5.1.3 Advice on fodder	No 00	Yes 01	No 00	Yes 01		
5.1.4 Advice on breeding	No 00	Yes 01	No 00	Yes 01		
5.1.5. Other (Specify)	No 00	Yes 01	No 00	Yes 01		

	5.1 Do you provide this service?		5.2 Do you charge?		5.3 Frequency of operation per month
Livestock Service/Inputs					
5.1.6 Vaccinations	No 00	Yes 01	No 00	Yes 01	
5.1.7 Drugs apart from vaccinations	No 00	Yes 01	No 00	Yes 01	
5.1.8 Small operations (eg Castration)	No 00	Yes 01	No 00	Yes 01	
5.1.9 Big operation	No 00	Yes 01	No 00	Yes 01	
5.1.10 Calving	No 00	Yes 01	No 00	Yes 01	
5.1.11 Artificial insemination	No 00	Yes 01	No 00	Yes 01	
5.1.12 Supply/loan of breeding stock	No 00	Yes 01	No 00	Yes 01	
5.1.13 Other (Specify)	No 00	Yes 01	No 00	Yes 01	
Livestock Market Information					
5.1.14 Prices	No 00	Yes 01	No 00	Yes 01	
5.1.15 Demand for particular products	No 00	Yes 01	No 00	Yes 01	
5.1.16 Other (Specify below)	No 00	Yes 01	No 00	Yes 01	
Crops Advice					
5.1.17 Diagnosis of crop pests and diseases	No 00	Yes 01	No 00	Yes 01	
5.1.18 Soil erosion	No 00	Yes 01	No 00	Yes 01	
5.1.19 Ploughing / plough use	No 00	Yes 01	No 00	Yes 01	
5.1.20 Pest management advice	No 00	Yes 01	No 00	Yes 01	
5.1.21 Improving soil fertility / organic fertilizer	No 00	Yes 01	No 00	Yes 01	
5.1.22 Inorganic / chemical fertilizer	No 00	Yes 01	No 00	Yes 01	
5.1.23 Terracing	No 00	Yes 01	No 00	Yes 01	
5.1.24 Other aspects of water conservation.	No 00	Yes 01	No 00	Yes 01	
5.1.25 Weed Management	No 00	Yes 01	No 00	Yes 01	
5.1.26 Agro-forestry advices	No 00	Yes 01	No 00	Yes 01	
5.1.27 Recommendations on seed varieties	No 00	Yes 01	No 00	Yes 01	
5.1.28 Seed selection multiplication	No 00	Yes 01	No 00	Yes 01	
5.1.29 Seed storage	No 00	Yes 01	No 00	Yes 01	
5.1.30 Hibiscus advice	No 00	Yes 01	No 00	Yes 01	
5.1.31 Other (Specify)	No 00	Yes 01	No 00	Yes 01	

	5.1 Do you provide this service?		5.2 Do you charge?		5.3 Frequency of operation per month	
Crops Service, Sales and Inputs						
5.1.32 Pesticide supply / sale	No 00	Yes 01	No 00	Yes 01		
5.1.33 Crop seedling supply / sale	No 00	Yes 01	No 00	Yes 01		
5.1.34 Tree seedling supply / sale	No 00	Yes 01	No 00	Yes 01		
5.1.35 Seed Dressing	No 00	Yes 01	No 00	Yes 01		
5.1.36 Seed supply / sales	No 00	Yes 01	No 00	Yes 01		
5.1.37 Fertiliser Supply / sale	No 00	Yes 01	No 00	Yes 01		
5.1.38 Equipment supply / sale / hire	No 00	Yes 01	No 00	Yes 01		
Agriculture Market Information						
5.1.39 Prices	No 00	Yes 01	No 00	Yes 01		
5.1.40 Demand for particular crops/products	No 00	Yes 01	No 00	Yes 01		
5.1.41 Packaging	No 00	Yes 01	No 00	Yes 01		
5.1.42 Other (Specify below)	No 00	Yes 01	No 00	Yes 01		

5.4 Have you developed any new practice or improvement in technology / treatment for use by yourself and others?	No 00	Yes 01
5.5 If yes, describe		

5.6 If you come across a technical/disease problem you are not familiar with, where do you get information? Indicate as many as apply	5.7 Do you pay for the information?		5.8 On average, how satisfied are you with the information they give						
	No 00	Yes 01	No 00	Yes 01	Very 01	Quite 02	Average 03	Unsatisfied 04	Very unsatisfied 05
Other local extensionist / CHW	No 00	Yes 01	No 00	Yes 01	01	02	03	04	05
Friends / neighbor / relatives	No 00	Yes 01	No 00	Yes 01	01	02	03	04	05
Government staff	No 00	Yes 01	No 00	Yes 01	01	02	03	04	05
NGO / UN agencies	No 00	Yes 01	No 00	Yes 01	01	02	03	04	05
Shopkeeper	No 00	Yes 01	No 00	Yes 01	01	02	03	04	05
Schoolteacher	No 00	Yes 01	No 00	Yes 01	01	02	03	04	05
Bookseller	No 00	Yes 01	No 00	Yes 01	01	02	03	04	05

Other (Specify)	No 00	Yes 01	No 00	Yes 01	01	02	03	04	05
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6. INPUTS AND SUPPLIES

	6.1 Do you get any inputs and supplies from these suppliers – if so which? (if they do not use any supplier, write <i>none</i>)	6.2 Do you pay for these inputs or supplies		6.3 Do you experience difficulty obtaining these inputs or supplies?		
Other local extensionist / CHW		No 00	Yes 01	Always 01	Sometimes 02	Never 03
Government		No 00	Yes 01	Always 01	Sometimes 02	Never 03
NGO / UN agencies		No 00	Yes 01	Always 01	Sometimes 02	Never 03
Private company		No 00	Yes 01	Always 01	Sometimes 02	Never 03
Shop		No 00	Yes 01	Always 01	Sometimes 02	Never 03
Other (specify)		No 00	Yes 01	Always 01	Sometimes 02	Never 03

7. REMUNERATION/DEDICATION

7.1 What is your level of dedication to the local extensionist / CHW work? <i>Circle one</i>	Full time occupation 01		Main but not only occupation 02		Secondary occupation 03	
7.2 Have you been hired by other organisations for extension work or training?	No 00	NGO / UN 01	Government 02	Another community 03	Input supplier 04	Other 05
7.3 Name of People / Organisation(s)						
7.4 What were the benefits?	Single payment 01	Regular payment 02	Kind / gift 03	Honour / social 04	None 05	

8. SUSTAINABILITY/MOTIVATION

8.1. What is the biggest challenge or disadvantage of being a local extensionist?	
8.2 What have you done to overcome this challenge?	
8.3 What was/is your motivation to keep on working as a community extension worker?	
8.4 What in the your opinion are the characteristics of a good community based extensionist?	

Further comments or information: (please continue over the page if necessary)

Food Security and Extension Farmer Focus Group Discussion Outline

Project Perceptions	
<p>Introductory questions</p> <ul style="list-style-type: none"> • What have been the most useful technologies or agricultural practices you have learned about through this project? • What has been their impact on your production or on your livelihood? • Did it help you to feel confident to experiment and innovate? Any examples? • How could the training be improved? • Were there any important production areas that were not covered by the project? 	
<p>Time line of general changes in the community</p> <ol style="list-style-type: none"> 1. Draw a line to cover the last 8 years. Start by marking significant events as a memory jog. Were there any other significant events in the community? Add them. 2. Map a trend line of the wellbeing of the whole community. How was it in 2000? Has it improved or gone down at different points? 3. Map a trend line of the food security of the poorest section of the community. Include changes in receipt of welfare or food aid. 4. What are the key factors have contributed towards these trends? (list/add to time line and note details) 5. Prompt: social changes; roads; political changes; policy changes 6. Finally, if not mentioned, what role did the project play? 7. Rank the top 5 factors including practical action in terms of their significance in improving 1) the wellbeing of the community and 2) the food security of the poorest. 	
<p>Sustainability</p> <ul style="list-style-type: none"> • Immediately after the project finished, was the community feeling some benefit from the project? Give examples. • Have all those benefits been sustained until now? If not why not? • Have other benefits or successes emerged over time / since the project finished? • Which project activities are still being practiced the most? • Which project activities did people not continue to practice? 	
<p>Replication</p> <ul style="list-style-type: none"> • Have you seen any evidence that project activities have been replicated by non beneficiary households within this community? Give examples. • Have you seen any evidence that project activities have been replicated in other non-participating neighbouring communities? Give examples. 	

<p>Community organisations / empowerment</p> <ul style="list-style-type: none"> • What organisations, committees or informal groups exist now within the village. Which existed before the project? Which ones are for women and which for men or mixed? • How frequently do they meet. Has this changed over time since the committees were formed. Have they been consistent or experienced problems? • What type of activities they are running? Do you produce a community plan? DO you have one for this year? • What are the benefits for the members? • How do collect money (membership) and what do you use those funds for? How do you manage those funds? • What other skills for managing these organisations or committees have you gained. What difference has this made? • How important is the community centre? • Have you approached any other institutions for funding or support? Were you successful? • How is the situation different to 6 years ago? Do they feel better able to influence external institutions? 	
<p>Institutional mapping</p> <ul style="list-style-type: none"> • Map the trend in access to external institutions (government, non-government). More visits from agencies? More visits to agencies (government / NGO). 	
<p>Women's participation</p> <ul style="list-style-type: none"> • Are women participating in any community organisations or committees more, less or the same as 10 years ago? Highlight which ones they are participating in more or less. What is the reason for any change? • Are women participating in household decisions more, the same or less than 8 years ago? Has this caused any difficulties? What is men's attitude towards women's empowerment (involvement in business, meetings, travel, training, etc)? • Have there been any other social changes relevant to women (dowry, early marriage etc)? What are the trends? What is the reason for any change? • Do women have more control over financial resources in the household? Is there more income to the household than 10 years ago? How is any additional income spent? • Women's mobility map (include market) 	
<p>Market access</p> <ul style="list-style-type: none"> • What type of product do you sell in markets? • How has access to markets changed – for men and women? • Where is the nearest market for agricultural produce? Is it the same place for selling and buying. Is it the same market as 10 years ago, if not is it nearer or further from the village? Reason for change? Has the market grown or got smaller? 	

<ul style="list-style-type: none"> • If you are selling larger quantities do you go to another market? • Is there more demand for livestock produce compared to 10 years ago? • Is there more demand for vegetables in the market? • Where do women sell processed food? Is there more demand than 10 years ago? 	
<p>Community Extension</p> <ul style="list-style-type: none"> • What are the benefits of the local extensionist? Has anyone ever experienced any problems? • What is the attitude of the local extensionist towards the poor or those who cant always pay? Is there any difference in service to different social or ethnic groups? • What has been the overall impact of the local extensionist in the community? 	
<p>Coping strategies</p> <ul style="list-style-type: none"> • Has the project helped you to cope better with drought? How? • Has the project helped you to cope better with the conflict situation? How? 	
<p>Impacts</p> <ul style="list-style-type: none"> • Which groups benefited most from the project? Poor/rich? Women/men? • What have been the most important impacts for those poorest households? • What have been the most important impacts for the community as a whole? • What difference has the project made particularly to food consumption? • Has there been any impact on the nutrition of community members? • Has the situation in this village improved more over the last 10 years than other villages? Is this due to the project? • What kind of project do you prefer: food aid, cash handout, or capacity building and technologies (like this project) • Were there any unexpected impacts of the project? • Where there any negative impacts of the project? • What gaps did the project fail to address? • What challenges are remaining in the community? 	

SEMI STRUCTURED INTERVIEWS WITH EXTENSIONISTS
SUDAN DRAFT

7.1.1.3 Identification of Household <input type="checkbox"/>	
Name of Person Interviewed <hr/>	
Name of Village <hr/>	<input type="checkbox"/>

To be completed by Interviewer	Date of Interview <table style="display: inline-table; border: 1px solid black; text-align: center;"> <tr> <td style="width: 20px;">2</td> <td style="width: 20px;">0</td> <td style="width: 20px;">0</td> <td style="width: 20px;"> </td> </tr> </table>	2	0	0	
2	0	0			
Name of Interviewer <hr/>	Day <table style="display: inline-table; border: 1px solid black; text-align: center;"><tr><td style="width: 20px;"> </td><td style="width: 20px;"> </td></tr></table>				
Signature <hr/>	Month <table style="display: inline-table; border: 1px solid black; text-align: center;"><tr><td style="width: 20px;"> </td><td style="width: 20px;"> </td></tr></table>				
Comments:	Year				

TRAINING

1. Why do you think you were selected for local extensionist training?
2. What aspects of the learning have you communicated the most to farmers?
3. What part of the training was not useful?
4. Did you face any difficulty of understanding in the training because of the language or vocabulary or style of teaching used? Please explain.
5. Were there any problems of any kind with the training?
6. How could these problems be solved?
7. Once you started working did you notice any gaps in the training that ought to be filled?
8. Did you receive a certificate on completion of training, and if so what were the benefits? If not, what benefits could it bring?

TECHNICAL

9. (Paravet) What is the most difficult technical service that you feel confident to provide?
10. Describe any technical innovations that you have noticed farmers have developed.
11. How do you know that your advice, treatment or technical messages have been effective?
12. Have you ever given advice/inputs that didn't work very well? What was it? How did you deal with that situation? How do you resolve any conflict or disagreement?

CLIENTS

13. Who are your priority clients? (you can prompt by giving options such as Family, Friends, Rich Farmers etc) Why?
14. If a farmer is not able to pay (in cash or kind), what do you do?
15. Are there times when you do not want to provide a service to client? When and why?
16. What has been the general trend in your number of clients since one year after you started (perhaps draw a simple line graph over years)
17. Have you observed in some cases that farmers have learned from you and as a result no longer require your services? What is your approach in this case?

COMPETITION/COLLABORATION

18. Are there other service providers offering a similar service. Who are they, in what areas do they overlap with your service and if so how does this affect your operation as a local extensionist/CHW?
19. Do you face any problems from government due to legislation or regulations which limit your activities?
20. Do you collaborate with other local extensionists/CHWs. How? When? How often?
21. If there were a local extensionist /CHW network what could be the benefits?
22. Have you any links to the state ministry of agric. / technology & extension department? How?

MOTIVATION

23. **WOMEN ONLY** Are there any particular challenges of being a woman extension worker
24. What have you done to adapt to these challenges?
25. Is there anything that would cause you to stop working as a local extensionist /CHW? If yes, please describe?
26. Has the conflict situation had any influence on your ability to provide a service
27. Has the conflict situation had any influence your role in the community?

Annex 4: Community Extension Survey: Further Tables

Basic Data

Relation with the household head

	Agricultural extension	Paravet	Total
Self	20 76.9%	20 76.9%	40 76.9%
Wife	5 19.2%	3 11.5%	8 15.4%
Son/daughter	1 3.8%	2 7.7%	3 5.8%
Brother/Sister	0 .0%	1 3.8%	1 1.9%
Total	26 100.0%	26 100.0%	52 100.0%

Marital status of the respondent

	Agricultural extension	Paravet	Total
Married	27 96.4%	23 85.2%	50 90.9%
Unmarried	1 3.6%	4 14.8%	5 9.1%
Total	28 100.0%	27 100.0%	55 100.0%

Age groups

		Agricultural extension	Paravet	Total
Age groups	20-25	3 10.7%	5 19.2%	8 14.8%
	26-30	4 14.3%	5 19.2%	9 16.7%
	31-35	6 21.4%	4 15.4%	10 18.5%
	36-40	7 25.0%	7 26.9%	14 25.9%
	41-45	5 17.9%	4 15.4%	9 16.7%
	46-50	2 7.1%	0 .0%	2 3.7%
	50+	1 3.6%	1 3.8%	2 3.7%
	Total	28 100.0%	26 100.0%	54 100.0%

Sex of the respondent

		Agricultural extension	Paravet	Total
Sex of the respondent	Male	16 57.1%	20 74.1%	36 65.5%
	Female	12 42.9%	7 25.9%	19 34.5%
	Total	28 100.0%	27 100.0%	55 100.0%

Training

Did you accept training for Income?

		Agricultural extension	Paravet	Total
No		19	21	40
		67.9%	77.8%	72.7%
Yes		9	6	15
		32.1%	22.2%	27.3%
Total		28	27	55
		100.0%	100.0%	100.0%

Did you accept training for Skills?

		Agricultural extension	Paravet	Total
No		9	12	21
		32.1%	44.4%	38.2%
Yes		19	15	34
		67.9%	55.6%	61.8%
Total		28	27	55
		100.0%	100.0%	100.0%

Did you accept training for Network?

		Agricultural extension	Paravet	Total
No		23	25	48
		82.1%	92.6%	87.3%
Yes		5	2	7
		17.9%	7.4%	12.7%
Total		28	27	55
		100.0%	100.0%	100.0%

Did you accept training for Social Status?

		Agricultural extension	Paravet	Total
No		27	25	52
		96.4%	92.6%	94.5%
Yes		1	2	3
		3.6%	7.4%	5.5%
Total		28	27	55
		100.0%	100.0%	100.0%

Did you accept training for knowledge?

		Agricultural extension	Paravet	Total
No		17	12	29
		60.7%	44.4%	52.7%
Yes		11	15	26
		39.3%	55.6%	47.3%
Total		28	27	55
		100.0%	100.0%	100.0%

Did you accept training as an obligation?

		Agricultural extension	Paravet	Total
Not		9	9	18
		32.1%	33.3%	32.7%
Yes		19	18	37
		67.9%	66.7%	67.3%
Total		28	27	55
		100.0%	100.0%	100.0%

What type of support did you received immediately after the training?

		Agricultural extension	Paravet	Total
No Equipment		6	11	17
		21.4%	40.7%	30.9%
Equipment		22	16	38
		78.6%	59.3%	69.1%
Total		28	27	55
		100.0%	100.0%	100.0%

		Agricultural extension	Paravet	Total
No drug supply		27	0	27
		96.4%	.0%	49.1%
Drug supply		1	27	28
		3.6%	100.0%	50.9%
Total		28	27	55
		100.0%	100.0%	100.0%

		Agricultural extension	Paravet	Total
No seeds		13	27	40
		46.4%	100.0%	72.7%
Seeds		15	0	15
		53.6%	.0%	27.3%
Total		28	27	55
		100.0%	100.0%	100.0%

3 VEAs claimed to have received no support

10 of the 27 VEAs had received further training from FAO on pest management; no paravet has yet received further training.

Has s/he been involved in training other extensionists?

		Agricultural extension	Paravet	Total
	No	11 39.3%	15 78.9%	26 55.3%
	Yes informally	8 28.6%	4 21.1%	12 25.5%
	Yes Formally	9 32.1%	0 .0%	9 19.1%
	Total	28 100.0%	19 100.0%	47 100.0%

Coverage of Service

Length of service Years

		Agricultural extension	Paravet	Total
	2 or less	3	11	14
	3	7	3	10
	4	6	6	12
	5 or more	11	2	9
	Total	27	22	49

Highest distance covered (Km -Grouped)

	Agricultural extension	Paravet	Total
0-4	11 40.7%	7 26.9%	18 34.0%
5-9	12 44.4%	13 50.0%	25 47.2%
10+	4 14.8%	6 23.1%	10 18.9%
Total	27 100.0%	26 100.0%	53 100.0%

Name of vehicle for extension to most distance client

	Agricultural extension	Paravet	Total
Walking	1 3.7%	5 18.5%	6 11.1%
Donkey / horse / camel	26 96.3%	22 81.5%	48 88.9%
Total	27 100.0%	27 100.0%	54 100.0%

Time required to reach furthest client (Hour).

	Mean	Maximum	Minimum
Agricultural extension	1.8173	5.00	.50
Paravet	2.7130	10.00	.50
Total	2.2736	10.00	.50

Have you attend to the farmers by regular visits around the village

		Agricultural extension	Paravet	Total
No		11	14	25
		39.3%	51.9%	45.5%
Yes		17	13	30
		60.7%	48.1%	54.5%
Total		28	27	55
		100.0%	100.0%	100.0%

Have you attended to the farmers by Selling inputs

		Agricultural extension	Paravet	Total
No		23	22	45
		82.1%	81.5%	81.8%
Yes		5	5	10
		17.9%	18.5%	18.2%
Total		28	27	55
		100.0%	100.0%	100.0%

Have you attended to the farmers in the market place

		Agricultural extension	Paravet	Total
No		19	9	28
		67.9%	33.3%	50.9%
Yes		9	18	27
		32.1%	66.7%	49.1%
Total		28	27	55
		100.0%	100.0%	100.0%

Farmer visits you

		Agricultural extension	Paravet	Total
No		18	24	42
		64.3%	88.9%	76.4%
Yes		10	3	13
		35.7%	11.1%	23.6%
Total		28	27	55
		100.0%	100.0%	100.0%

Have you attended to the farmers by Phone

		Agricultural extension	Paravet	Total
No		25	22	47
		89.3%	81.5%	85.5%
Yes		3	5	8
		10.7%	18.5%	14.5%
Total		28	27	55
		100.0%	100.0%	100.0%

Have you attend to the farmers by Emergency call out

		Agricultural extension	Paravet	Total
No		24	20	44
		85.7%	74.1%	80.0%
Yes		4	7	11
		14.3%	25.9%	20.0%
Total		28	27	55
		100.0%	100.0%	100.0%

Other opportunities for attending farmers include mosque and social ceremonies, or sending written instructions or guidance.

How much service do you give to the poor section of the community

		Agricultural extension	Paravet	Total
The poor are my priority		12	4	16
		80.0%	57.1%	72.7%
The rich and poor have equal priority		2	3	5
		13.3%	42.9%	22.7%
Those able to pay receive priority		1	0	1
		6.7%	.0%	4.5%
Total		15	7	22
		100.0%	100.0%	100.0%

Mode of Transport

Walk to reach farmers

		Agricultural extension	Paravet	Total
No		23	18	41
		82.1%	66.7%	74.5%
Yes		5	9	14
		17.9%	33.3%	25.5%
Total		28	27	55
		100.0%	100.0%	100.0%

Donkey to reach farmers

		Agricultural extension	Paravet	Total
Not		0	5	5
		.0%	18.5%	9.1%
Yes		28	22	50
		100.0%	81.5%	90.9%
Total		28	27	55
		100.0%	100.0%	100.0%

Motivation/Sustainability

Level of dedication to extension

		Agricultural extension	Paravet	Total
Full time occupation		4	3	7
		17	16	33
Main but not only occupation		7	8	15
		28	27	55
Total		28	27	55

Has s/he been hired by other organization *

		Agricultural extension	Paravet	Total
Has s/he been hired by other organization	No	23	24	47
	Yes	4	2	6
	Total	27	26	53

What kind of organisation

Count				
		Agricultural extension	Paravet	Total
What kind of organisation	NGO/UN	1	0	1
	Another community	3	1	4
	Total	4	1	5

Main Problems Encountered in the VEA/Paravet Service role

- A: Insufficient access to transport 30
- B: Miscellaneous lack of equipment and inputs 31
- C: No salary or payments: 16
- D: Insecurity: 4
- E: Difficulties in balancing time with own farm priorities 4
- F: No problems: 4

Overcoming these problems

- A: Borrow donkey 6
- B: Go on foot 3
- C: Commitment to role despite problems 5
- D: Get support from VDC 3
- E: More careful planning of activities: 5
- F: Reduce service: 2

Motivation

- A: Voluntary service in the community 45
- B: Personal Material Benefit: 31
- C: Personal Non-Material Benefit: 16

Characteristics of a Good Community Extensionist

Honest/Patient/Polite/Tolerant: 100+

Energetic/hardworking; 30

Technical abilities: 13

Annex 5: Personal Accounts

The following stories illustrate the impacts of the project in a direct and personal way.

Yagoub Hassan Yagoub is 43 years old. He lives in Abudegase village in North Darfur, Sudan. He is married and has 8 children, 4 daughters and 4 boys. Six of them are in school, one in high general secondary school and five in primary school. This is how the situation has changed for Yagoub since before the Practical Action intervention.

We had a water reservoir before the Practical Action intervention. It was constructed in collaboration between Sudan government and community. But there was no maintenance done on it since it was constructed until Practical Action came. During that time the water level had fallen and I suffered a lot from lack of water. I used to travel miles to bring water for the family which took time and effort. After the reservoir maintenance given by Practical Action now I don't have any problems regarding water, and this has saved time to do other activities.

Before Practical Action I didn't have any idea about certified (hybrid) seeds (tomato, okra, watermelon, cucumber) or about crop diversification. I used to depend on one cash crop, and staple crops like millet and sorghum. I was facing marketing problems for my crop. But now I have been given certified seeds which are very productive so my production has increased in quantity and quality and now I have better access to market. This has improved my livelihood so I able to pay school fees for my children, and bought furniture for my house, a donkey and a mobile phone.

With regard to water harvesting, before project I was using a traditional method of terracing which was less efficient. The new terrace structure we have learned about is curved in shape and is very useful for raising soil moisture content and thus increasing productivity. This has also contributed to improvement in my livelihood as mentioned above.

The project helped me a lot to empower myself so I able contact government as well as INGOs and other service provider easily to get services for my village and I'm not worry about that and not hesitate to do that at any time. Through Practical Action I am able to communicate with the international community. I received goats from Practical Action and the impact right now is provision of milk for my children instead of dried milk from market which was not enough.

I am not directly effected by the conflict, but I hosted some IDPs from neighboring villages, moreover we used to pay money for factions in return our village could be save, also the life became a bit expensive but we received UN ration, also we forgot about unnecessary food we only buy food that make us survive.

Problem facing me right now, we have dam but we don't have capital to use it, we depend on contaminated source of water which is Hafir, and desert creeping.

My name is **Halima Adam Mohammed**, I was born and brought up in a small village named *Abu Digase* in south North Darfur state El Fasher locality. I'm 21 years. I live with my family mother and four brothers. I am secretary for Women Development Association (WDA).

In 2000 livelihood situation of our family has decreased and became very difficult because my father is died and the eldest brother 16 years old. After that we depend in my uncles to give us assistance but not enough to meet our needs and education fees. Then my mother named *Mstora Anas* (50 years old) obliged to take us from school and worked as agricultural labour. In 2002 we decided to cultivation our land established by prepare land manually and grew about 4 mukhamas millet looking out harvest but harvesting yield about 10 Kg only.

In 2003 our relation ship with Practical Action began through agricultural inputs, animals, the plough, tools and improved seeds, and raised our capacity in terrace lay out. We grew 10 (mukhamas) and harvested 10 sacks sorghum, 15 sacks millet, 50 box tomatoes and 10 quintal okra. We were then able to send 4 boys back to school to complete education.

Then, we received 5 goats and were trained in food processing. After training we started making sweets and dry juices and sold them in our village. Then our income increased to 250 SDG monthly beside our storage from stable food and agricultural yields not less than two thousand SDG.

Last agricultural season we harvested 3 quintal okra, 20 sacks millet and sorghum and 4 quintal tobacco. Then rebuilt our house from 2 rooms straw to 4 rooms (Guteia), bought bicycle, new furniture, donkey and tow mobiles. Our goats became 18 goats produced about 15 bound milk and we bought 6 sheep. Now our oldest brother is at Khartoum University, two in secondary and two in basic school.

Annex 6 – Notes from Food Security Farmer Focus Group Discussions

1) Azagarfa, El Fasher Rural. 17/03/08

Mixed group: men and women

Practical Action has been working here for 10 years. It is the first village they worked in in El Fasher district under the Darlive project.

We looked at several buildings: VDC, WDA, grain store, blacksmith store, seed and tool store, amongst others.

“The fact that we are all sitting here together is a result. Before the only organisation was cooperatives in the village for selling things. This is a totally different type of organisation. Now every month we are improving, not even every year but every month. Everyone feels that their thinking is different” (CHAIRMAN)

In the grain store people store their own grain and it is registered plus they contribute to the community store. Now only community grain is stored there because it was raided by the SPLA 3-4 years ago and people have been afraid to keep grain there since.

Timeline

1998	Exceptionally good year for harvest. So good that someone bought a grinding mill for the first time and would rent it out to others. Practical Action arrived. Diversification of crops, introduction of plough and manufacturing started. Women are getting credit/loans.
2000	Bad rain season. VDC was established and registered.
2001	Visit of state government plus many PA staff came and opened some activities. The government wanted it to be a model village.
2002	Dam established and amount of land cultivated increased
2003	Civil war started and village was attacked by SPLA which caused a lot of damage to assets. People who were looted were left with nothing. Local authorities (sheik etc) left temporarily because targeted by SPLA
2004	Good rains but some damage to dam.
2005	More deterioration in the situation. Migration for several days at a time to El Fasher because people are afraid. Stay there for the dry season with family – around 75% displacement during dry season.
2006	Establishment of VDC Net. Chair of Azagarfa VDC is chair of the Net. All people return back to the village. Construction of health centre starts (not completed)
20078	A village member is elected to the state assembly and is able to supply free drugs.

The most important improvement is the plough, seeds and terrace (higher and overlapping) combination. In some places production has improved a lot but there has also been 5 consecutive years of drought so still things have not been easy. Some people have had complete crop failure during drought years and some manage to do OK. It depends on their land.

The plough intervention led to an increase in the area cultivated.

Women preferred intervention was goat restocking, because it has a good impact on income. Vet service is also important.

They still need more water harvesting dams as there is a lot of wadi here.

The food security project finished in 2006 but activities are still continuing: stores, revolving funds.

The community has also invested in its own activities: the establishment of a pharmacy; telephone service; a generator; satellite and TV; done own goat and donkey restocking for 80 families; human drug revolving fund; 2 classes in school got furniture (funds from UNICEF). Funds for these activities came from other agencies in some cases.

Institutional Mapping

2008: FAO – goat restocking and donkeys project; Government health ministry gave medicines

2007 UNICEF school / farmacy, 2 hand pumps; CFCI – books for school, sports equipment fund; UNIMIS – health centre being constructed

2001: Sudan Red Crescent built a Hafir; WFP gave food for work for hafir construction;

1999 Oxfam training of paravets (PA was in 2000 and 2005)

1998 Practical Action...

Ranking (benefits)

1. Practical Action
2. FAO
3. WFP
4. UNIMIS
5. Red Crescent
- 6 UNICEF
- 7 Government

Ranking (access for men)

1. Practical Action
2. FAO
3. UNIMIS and UNICEF
4. WFP
5. Red Crescent
- 6 Government

Ranking (access for women)

1. Practical Action
2. FAO
3. Red Crescent (gave training in sewing plus water/hafir is critical for women)
4. UNIMIS
5. Government
6. UNICEF
7. WFP

FAO – every year they have given seeds since 2002. Staple crops only. They prioritised them because of the large amount of money they spend and the support is also accessible.

Community institutions

Before the project: #

1. popular committee
2. women's union
3. youth union

Now these no longer exist – but they were just nominal and didn't provide any services.

Now

1. VDC
2. WDA
3. blacksmith society
4. grainbank committee

Exec committee meets fortnightly. But they stopped between 2003 and 2005 because members were outside the community.

Uses for community building:

Vaccinations

TV every afternoon

All meetings held there

Social centre

Salvation committee meetings

WDA/VDC committee meetings

Women discussion

Like the terrace and plough so there is more production especially of vegetables. Plough is the most important, and the kitchen garden for vegetables.. They used to plough with horse or camel but could not be used by women, donkey plough can be used by women. Now they grow okra, aubergine, tomato. They are early maturing varieties. Production is three times what it was before the plough.

There is more diverse food in the household, This is good for health. There is food all year round when before there was not. Before some in the household got less food but now all can eat. Men always eat first then women.

Women and men both benefit the same from project activities.

The poor are benefiting less because the rich have more land and can get more benefit by hiring labour.

Before the project women were not given membership of any committee, Now they are. Some here have come from other villages in this cluster to give their inputs. Before they never travelled to other villages, only to visit relatives. It gives them increase pride to meet people from outside and be representing their household without their husband. They never did anything like this before.

At the household level there is more status and stability. Before men travelled and left the family alone for labour sale. Now they do this less because they can farm their own land or labour nearby. Before there was no transport and now there is. Yesterday they went (to El Fasher?) to sell tomato as a group.

The population is 550 households in all 5 communities in the cluster.
There is a primary school.

There is a health post with government staff and free drugs.
Main illness is diarrhoea and cough (mainly children). Now they have funds for building a clinic for Azagarfa and the surrounding villages.

Blacksmiths started with a revolving fund of around US\$1,000. Now they have US\$3,000. They use it for buying steel. Most of the fund is in the form of capital. Most blacksmiths are now based in El Fasher even though family is in the village because they have contracts and work together there to fulfil them. Some steel is in the village and they work there too mainly on tools for local use.

WDA shop was built 3 years ago but was closed for 2 years because of the conflict and fear of raiding. It only recently reopened. It had been looted.

Seed and tool store. F1 varieties for vegetable seeds because these are better quality for veg sales (especially watermelon). Local tomato exists but F1 is better as it is less squishy. Local okra is preferred for taste but is very spiny for preparation and drying.

There was a long list of activities on the wall most of which had been achieved. This was their strategic plan...

2. Abudigis. El Fasher Rural 18/03/08

Mixed group: men and women

Been working there since 2003

1998	Good rains and have everything in their life. But some experienced flooding and loss of animals and even humans. Harvest was good in goz,. Some got less in wadi because terraces got washed
1999	Another drought, some migrated to other villages for cultivation where it more productive (wadi areas)
2000	Improvement, medium rainfall
2001	Drought all over the area, migration again for cropping by 90% of farmers. 1 bag of milled grain reached US\$60 and there was no relief
2003	Fire in village – 22 houses burned down Drought Civil war started, many IDPs came, thousands resting en route Practical Action started working
2004	Escalation of violence. Village was attacked and looted. People were frightened. A horse fell in the haffir and contaminated it (only one outlet was there) so they had to get water directly from the haffir edge
2005	Firs mosque established (permanent brick) built by a rich man in El Fasher Big migration of youth (160pp) to Khartoum because of conflict and drought. Many have stayed, only few have returned but they are sending money. Their families would prefer they come back. Still people are migrating but mainly seasonal. Establishment of seed bank / grain store and first training in midwifery by Sudan red crescent. Haffir got dried up completely for the first time
2006	Thresher bought by one individual
2007	Goat and donkey restocking

	<p>Complete crop failure from drought, worst ever. Some didn't even plant because no rain. WFP provided food, some people had saved food but only 5%. Millet and sorghum were available in the grain store to borrow.</p>
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When the hafir was dry in 2005 they took advantage to dig it deeper.

The situation deteriorated in 2003/04 then started to improve again. Even with bad years general agricultural production and livelihoods have improved, Some have bought cars, some a thresher, there are more kids in school, more graduating from university. In drinking water there has been no improvement. It can take 12 hours to get drinking water because of the distance.

What contributed to the above improvements? Planting cash crops, establishment of seed bank has given different seeds like tomato. Terraces, tools, ploughs, goat restocking, drugs etc have all contributed.

Goat restocking – why to they have to be given to people? How can we buy when we don't have money to feed our children?

Terraces have been replicated by all within the community. People came from the surrounding areas and saw and asked what they were doing and they have also taught them.

There is still a problem with the plough as the soil is too heavy in this area. They made some improvements by asking blacksmiths to make them from thicker heavier steel.

Achievements: They had been planning a dam for the past 15 years. Now they have it. They raised the issue when the project came, contributed their labour. Also rehabilitated hafir. Dam is the biggest achievement.

Local institutions:

Popular salvation committee

Health committee

Dam committee

Mosque

Local administrative

WDA

Youth committee

Wider institutions

WFP do some relief.

VDC proposal to Unicef has been approved for classroom construction, plan to submit for clinics

Government MoA gave seeds over a number of years but very little.

Access to vets – none before, more now with paravet

Main market is in El Fasher

Cash crops now are tobacco and watermelon and vegetables (only tobacco before)

Income has increase from these sales.

Watermelon is new to the area, one of the most important crops. Can be US\$1000 earning now for a big farmer. All grow some at least.

Women discussion

Tools mean increased production.

No change in diet

They are not selling anything – their production is low so often they have to buy food.

Food processing training has not been scaled up yet.

Women present are not members of any committee but are members of the WDA.

Not mentioning massive improvements – donkey plough is easier for women. Selling goats means they can pay school fees.

Has been a school here for 10 years. Secondary in El Fasher. Majority have kids in secondary.

Women participate in everything but men make decisions. Women are able to save a little.

Food goes first to men, then children and lastly women.

Best in project is goat restocking.

No clinic. There is a health centre but no drugs.

One person has a generator for about 15 people renting.

There is no community building

WDA has a small one room building

There is a grain store and a seed store.

Some credit is provided by the women's net. Available to 100 households but no longer functioning. Not sure why. Some people did not repay. 2 people mentioned borrowing 45 SD one for drugs as she was trained as a first aider. Another for school fees.

3) Ghireiga, El Fashir Rural

Mixed group: men and women

17km south of El Fashir, 724 households in six villages.

Ghireiga Timeline

1998 Good rainy season, sufficient harvest

1999 Visitors from government: minister of health, minister of housing. El Fashir locality director, women's union representative, they offered school, provided them with solar panel.

2001 Three improved hand pumps, submersible electric pumps installed. Rainy season was normal, sheikh died.

2002 Good season, construction of grinding mill.

2003 IDPs from Jebilmara established a camp. 14 students succeeded in Sudan high school exam. Established primary school in Zamzam. VDC established

2004 Construction of seed bank and latrine for the VDC centre. Two hand pumps, unfortunately the water is not good. Rainy season was medium. Outbreak of birds and desert locusts

2005 Drilling of two hand pumps, this time the water is good. There is looting of 10 camels and two persons injured. Situation getting worse and worse in village due to insecurity. Looting of goats very common

2006 Security situation even worse looting became common, lost 300 goats and 156 cows. Rainy season average

2007 Only one month of rain (August). They had a dialogue between tribes for peace and reconciliation.

Increase in 2002/3 relatives from other villages settled due to lack of water in their areas
Natural increase

Some IDP relatives also joined

Around 2000 people altogether joined the village which has caused it to more than double in size over ten years

There is no outmigration, young men migrate for work during summer season.

Three times in ten years they have been selected for Food for Cultivation – AHA is the implementing organisation under WFP.

No electricity , only kerosene lamps are available.

Transport is not too bad as the ZamZam IDP camp is nearby, has regular vehicle transport to El Fashir

Water is improved. Some local sources have been closed due to high nitrate content. Two good water sources are still available

Village Primary school opened in 1993

Enrollment has gone from 15% to 90% in ten years.

There is a wide understanding for the importance of education, before they worked as shepherd, some students went to secondary school, this example was good for the village.

There are two students in the University.

Local people are paying the teachers' salaries. There is a problem of early marriage, with few girls continuing to secondary school.

18 boys and 10 girls are in secondary school

The nearest health centre is at ZamZam IDP camp. 25/30000 IDPs. 11 General improvement in access to basic services for villagers at the camp.

Negative impacts of the camp, 4 km away

- Cutting down of trees –
- Most of IDPs animals damage the crops
- Some set up home on our farms
- They are causing our area to become a desert

Further information from Siddig. In the Kids for Kids goat restocking programme, the village has by far the poorest performance in returning goats into the revolving programme, as monitored by VDCnet.

Major cause seems to be corrosive effect of IDP camp. Goats are from the whites and so not responsibility to restock the others, they will bring more.

Large Mixed Group at Ghiriega

Most important intervention – seed/tool bank. Provides seeds – beforehand they had to go for them to El Fashir a whole day round trip . That required 5 pounds each way as well as food etc in El Fashir

Formation of VDC – this was very important for access to agriculture and livestock services.

Goats provide milk for children. Goats are also sold for cash, for access to basic necessities.

Biggest gap is failure to construct a water harvesting dam. PA didn't fulfil that. When there is no natural flood on the wadi course, there is need for a dam to divert water there.

There are very limited sources of water for growing population.

Outbreaks of pests during rainy seasons – white fly is very difficult to control.

Health – no access at the village level

Training and capacity building are needed – there are very good people available

Very poor school environment: thatched hut with wooden poles.

There are two hand pumps which have been closed due to high nitrate content – they would like to use this water for other purposes – eg brick making. Need for management plan – ensure it is not consumed.

All the interventions have a value

Farmers have got benefit

There has not been spread of the benefit due to very weak monitoring by the VDC – none of the activities are continuing. Under guidance of VDC net they are attempting to rectify, review inputs received and try to revive some activities.

Seed/tool bank is continuing.

The plough is weak it has been rejected by the farmers.

Detail: they received 80 ploughs in two batches. The first 30 were no good and are sitting there in the tool bank. The main beam is weak – produced from scap springs – light steel.

The blacksmiths agreed to rectify these and strengthen them. They had to be delivered back to El Fashir through and VDC did not organise that. The second batch of 50 are fine and are in regular use..

A few people are using crescent shaped terraces successfully, others didn't get any benefit, maybe placing the crescent in the wrong direction. Indicated some problem with technical training – the VEA may not be very efficient.

Very good animal health – very good paravet service established. The people here are from a pastoralist background, now settled but their animal husbandry is very good, some local people have learned how to treat their own animals

Not all parts of the village are contributing to VDC activities. Communication of activities from the executive to the whole of the village is a weakness. Participation in meetings is quite low.

There is a cluster of 6 villages but the VDC doesn't cover them equally.

There is no impact of project activities in neighbouring communities.

There has been change: the VDC provides agricultural services that were not available before. But management is weak. The seed revolving fund is working but not increasing. They are also enjoying paravet services.

But not all villagers are benefiting or contributing. Maybe some more time is needed.
There is no womens organisation
There is a 33 member VDC, 7 are women.
Management committee of 7 all are men.

For last three years there have been pest control campaigns: bird control, locust control, grasshopper control, also a local yellow species of locust.
The VEA contacted the government, no logistic support is available. Technicians available to survey the area, but VDC has to pay them, provide food and hire vehicle.

Then for campaign itself, 5 pounds collected from each household

- 50 litres of pesticide solution collected from Crop Protection unit in El Fashir and 50 kg of dry pesticide.
- 2 sprayers mounted on hired vehicles, 18 community members using backpack spraying kit.
- Technicians work with community for 7 days.
- White fly impossible to control like this – eradication not effective unless it covers a wide area, can return 2/3 days after spraying.

Debate on causes of VDC weakness

All are blaming the chair of the VDC

Chairman – he has asked for contributions and participation but they have not been forthcoming – it is not fair to blame me

Causes are as follows:

- Insecurity – it is very difficult to come together There are SLA in the area. It is best to avoid gatherings of any kind, they are a focus for incidents
- Chair didn't provide information very widely, he worked as an individual for a reduced number of beneficiaries.
- Community didn't react much to the VDC opportunity , did not participate fully, everyone in their house. They are not used to coming together

With support of VDC net they are reviewing the functioning of all institutions in the village, the other one being the Salvation Committee (government sponsored structure) New elections for SC and VDC are to be held following next monthly meeting

Reaching the poorest:

Targetting of the poorest with incoming donations, esp the women headed households is the responsibility of the village sub committees of the VDC. There is a commitment to this task, but the VDC has not verified.

Case study proposed of individuals who have been transformed – name put forward Mohamed Suliman – Siddig will follow up.

Food production. NB Food stocks from a good season can last 2/3 years

- Goz soil. Cultivation has expanded but production has decreased. Exhaustion of soils.
- Shift to clay soil. Production has increased. 50/60% of farmers have shifted with the wadi soil technology package. It is very hard work and sometimes the drought is so bad that results are discouraging.

- Still, production from one unit of wadi is same as from 20 units of goz soil.
- Before they just grew millet. Diversification of production: seeds available from seed banks are now millet, sorghum, cow pea, sesame, cucumber, water melon, okra, tomato.

Poorest are now getting milk from goats, others already had, they are livestock specialists.

WOMENS' FGD

Water problem – its is far and it is also salty.

Education – not enough teachers

School environment is very poor – no seats and no books

Kindergarten is not available.

Number of midwives, only 2 in the six villages.

They are not aware of what the VDC is doing.

Some are not aware of how the VDC is managed

They are not invited to the meetings and not involved in decision making

The men would like women to keep silent and not intervene in VDC. Women are threatened not to talk.

The women would like their life to be changed, through adult literacy and equal participation in decision making.

Water should be adjacent to the village and health services should be available.

Maba El Fashir

Mixed group: men and women

317 households

Number of households has increased in the last ten years, natural increase of population, no in migration. Only four households have left the village.

Maba Timeline

1998 Good season, good agricultural production

1999

2000 Started collecting subscription from villagers to construct hafir. Rainy season was bad, no rain.

2001 General drought, **SOMAR** came to village to complete hafir construction with food for work, to fill the gap in food security after the harvest failed. Sheikh was killed by wife.

2002 VDC started to implement projects, construction of one room of village hall using community subscriptions

2003 Fencing the hafir War started in Darfur Practical Action started working with them through VDC

2004 Training of agricultural extensionist, very good rainy season, good pasture for the animals, animal health improving

2005 Establishment of VDC centre, construction work completed. Received improved seeds, donkey plough and seed bank. Last visit to the village by PA, then the vehicle hijacked.

2006 Outbreak of sheep disease, leading to poverty for some households, also general drought. VDC representative came to PA for training and to collect inputs and distribute in the villages. No field visit by PA

2007 Paravet training, distribution of kids rainy season not bad.

Other interventions in the village are as follows:

- 2001 SOMAR –National NGO – Digging of water reservoir (hafir)
- 2001 North Darfur Water Corporation – Installed three hand pumps – only one of which has ever functioned
- 2007 FAO – Goat Restocking – managed by VDC.

There is no electricity in the village, there is not a single kerosene lamp in the village.

Transport has been qualified as BAD, before it was VERY BAD

Access to drinking water is BAD, before it was VERY BAD – they had to go 30 km to collect it. Now they have a local source but can take one day to collect enough as it accumulates very slowly.

Now the primary school is in the village, before the children moved either 7 or 15 km for a school place

Now in the village 60% primary school attendance, compared to 10% ten years ago.

Girl enrolment – in a class of 50, there are 15 girls.

The reasons for not sending children:
No money for school fees/Shepherding/Fetching Water.

El Fashir is the nearest secondary school – 45 km – 10 students from the village are attending, ten years ago there were none.

Primary School fees – 5 Sudanese pounds per month
Secondary School fees – 100 Sudanese pounds per year, plus food/lodgings

Nearest health centre is at Azagarfa 7km, before El Fashir 45 km
At Azagarfa, the pharmacy has had very poor stock of medicines, only improving in the last few months.

Min Health has approved a clinic for Maba, but they still don't have a nurse or any means to treat small cases.

Large Mixed Group including leaders.

Most important intervention –
donkey plough- increased water infiltration rate, plant can withstand a long dry spell, better production
water – they have access to water compared to previously – fetching from long distances caused suffering

Women mentioned goat intervention as it means milk for children, but water also very important.

Main gaps – Midwife training done in other villages but not here. Also a water harvesting dam would create long term improvement – potential is there.

Even with new techniques, rainfall levels are extremely low, if the rainfall is below 150mm we still get virtually nothing.

Main challenge is climate change – forces increase in migrant labour as a coping strategy

Only rainwater harvesting dam will tackle this

Before Practical Action they were completely blind, now they know how to develop themselves, how to manage

Continuing activities are:

- Terrace construction
- Ploughs
- Community grain bank – full of seeds
- Water services maintenance
- Seeds

No intervention has stopped –everything is still practiced.

Replication

- Terracing and donkey ploughing

These two things have been copied within the village

Terracing practiced 100%

50% that have donkeys now use for ploughing. Some that do not have can borrow from relatives.

VDC will try to raise funds to buy donkeys for the poor.

Three villages further north have widespread adoption of terracing and donkey ploughing:

Matawe (larger than Maba) Arara (smaller) Armady (larger)

VEA has linked with govt. particularly Min Ag – pest control. Min Animal Health – paravet. Both working under the VDC.

VDC- linkages with Water Corporation. With locality executive manager.

VDC achievements are: community buildings, seed store, construction of huts for teachers, classroom and office for school.

Everyone even children knows how to plough and construct terraces.

All women are contribution in construction – money and unskilled labour.

Money collection box – each woman contributes – buy utensils for weddings and festivals.

For FAO VDC wrote proposal in Arabic – support and translation from PA.

UNICEF- VDC net- construction of classrooms

VDC is very confident to channel to donors through PA or VDCNet

Project inputs should go to poorest first, women headed households

Detailed portraits will be made

In general the food situation is better than before. At least they have some food, some production in a bad season, before they had none. This production gives them time to make a strategy, a coping strategy.

Now they have animals compared to before, outbreak of diseases was common, now it is controlled. Sheep move far away, goats can survive locally in drought year.

Most villagers have no direct access to any kind of information. VEA and Paravet have linkages as mentioned, there is a local radio station

Local knowledge available for treating animals – when pharmaceutical drugs not available

- Ziziphus/ Acacia milinena deworming
- Kangel -skin disease
- Water melon root system – diahorrea

WOMEN FGD

They have no midwife

Water fetching which is womens role is a burden as the source is far.

Access to education – there is no kindergarten

Not enough teachers to cover all the classes.

No adult literacy classes.

Contributing in the development of the village and the VDC is well connected with VDC Net, but they are not always invited for meetings

They are not contributing in village decision making

They raise their problems with the VDC, sometimes they get addressed and sometimes not.

There is some positive change in mens attitudes since the project, there is a dialogue without any barriers

Clarification on Water situation.

Maba

EC project envisaged hand dug wells, but geophysical report recommended hand pumps (50 m borehole) Provides seasonal source. 100m required for permanent source. During EC 15 hand wells constructed.

Maba hafir is a seasonal water source –August to November. There are hand pumps not far from the village. But the queues are long and water is slow to accumulate.

Animals need to be taken further – 7/10km this is 2/3 times a week – women do this.

Ghirieiga

PA has done 4 wells 2 EC and 2 Kids for Kids

Unfortunately Kids 4 Kids ones closed – water unfit for human consumption.

The two good sources are 3/4 km away – also slow process due to queueing

Permanent water source, deep borehole is at ZamZam. Women prefer to go there and collect water quickly and take animals at the same time (7km).

Both villages want more hand pumps.

Annex 7 - Interview with community based extensionists

Abu Bakr Beshar Abdella, Paravet, Um Jemmeina, 16/03/2008

He was chosen as he is active, able to read and write and had previous experience

The elements of his work that have had the most impact are: change from indigenous treatments to modern types, exclusion of animals from human water sources, and people now being aware of the importance of vaccination. The training duration should be extended from 1 to 1.5 months, to include use of stethoscopes in measuring rate of heart beat, the use of thermometer and the provision of information on the normal temperature of different types of animal.

The certificate gives proof of training, enabling him to gain the respect and confidence of the community.

There are various innovations or changes he has worked on with the community.

- ⇒ During an outbreak of HS disease (haemorrhagic septicaemia) the owners used acacia pods soaked in water and made animals drink it to treat it.
- ⇒ Application of *kunan*, an anti-mating apron (cloth over genitals) during summer.
- ⇒ Learning that when animals are kept away from homestead the production will much improve as they will be able to forage for food for longer time on the open ranges
- ⇒ He advised on the drawbacks of mating local sheep with large size improved breeds brought from outside the area as this was resulting in increased incidence of *dystocia*.
- ⇒ He gave extension on how to inject correctly. Now most owners practice injection by themselves in a correct way without referring to him

Nema Yousif Mohamed (F), VEA, Jaheed El Sail 16/03/2008

Because there is a lot of pest affecting our area we need to have comprehensive pest management training. The certificate motivated me to work and keep working with my committee; also it gives me license to work.

Terracing is being developed by farmers. They have double the depth from that which we advised on and as a result the terrace is stronger and harvests more water.

I work with a the farmers from my village and some other farmers from neighbouring villages (6 villages) I work for free with my community but Practical Action offered me a donkey. During the rainy season I become busy with my farm especially with weeding which must be done in a timely way, so I suggest to farmers that I will go them after I have done some of my own work. When I started in 2004 my clients were not many because they don't know the importance of my work. But later they became too many and they said our extension approach and what we advise them to do is better than their traditional ways. The farmers are always asking for more information.

I always consult the Ministry of Agriculture for getting improved seeds and pesticide. Nothing would cause me to stop working unless my community refuse my work. I don't think that will happen because I build a good relationship with them and they are happy with my work.

Mahmoud Abdullah Mohamed (M), VEA, Umhajaleej, 16/03/2008

He is the chief of his VDC and the community selected him because he is an active community worker.

There was just one problem with the training, on the timing of the pest control training. It is conducted at the beginning of the cultivation period which is a busy time so it was not suitable for us as farmers.

Farmers: before they didn't save and prepare their seeds for the next season but now they select and save when harvesting their crops. Last year 2007 I received okra seeds from Practical Action. When farmers cultivated this seed they found that it was not a good variety as they expected so they became angry at me. I explained to them that this seed was not tested by Practical Action or me because the growing season had already started. We work voluntary but PA offered me a donkey as transportation

I collaborate with local extensionists from nearby villages during the preparation for cultivation period sometimes we buy seeds from them and other technical information exchange

Mohamed Suliman Ahmed, VEA, Azagarfa, 16/03/2008

He was selected by community as he is the head of the public committee since 1989 and teacher. They trust him that to serve his community.

We are certified and it gives us the right to start working and the people will trust that we are really trained and we can work for them. Also it makes me proud of myself and motivated. He has 7 certificates: 5 on extension; one on strategic planning; one on the use of rain gauge

Once he gave the farmer advice to cultivate crops separately to avoid pesticide and disease. Those that did not follow his advice were badly affected and so they now follow his advice.

The role is entirely voluntary. Well educated people - they learned and they keep using his advice and no longer consult him, unless there is new technology or new information. Then he concentrated on his work with the less educated people

Annex 8

Note from discussion with Paul Symonds – *Coordinator of Food Security, Environment and Natural Resources, EC Delegation, Sudan*

Water harvesting dams – should be initiated by the N Darfur government and local leaders – they should be self initiated through soft loans.

An impact study of existing dams should take into account population growth around the dams, maybe requiring scaling up of basic services which have not happened?

Need to be part of an integrated plan – including reforestation.

DCPSF (Darfur Community Peace and Security Fund) has resources to deploy – looking at North Darfur – check dams and dispersal dams,

The government must be lobbied to pass a ban on sandy soil cultivation. After cultivation of sandy soils the natural vegetation does not re-seed. De-vegetation –compaction = downward spiral in production.

Ban would drive attention to wadi – tree planting on edge of wadi – as a sand break,

Have we analysed the impact of the donkey plough – considering possible increased labour burden for women and children?

Increased area of cultivation – what is happening to weeding, are they doing mulching, what is the labour requirement for pest control, are children being taken out of school?

What is Practical Action's vision of **seeds and tools programmes**?

There has been no evaluation whatsoever to date.

What is the life expectancy of the programmes?

Seed banks – we are pumping in seeds.

He has been trying to engineer changes to the FAO approach by securing a downgrade of the Darfur situation from Emergency to Crisis, without success. What is being done to preserve local cultivars? We need an analysis of the emergency aid distorted seed situation

Plough design – what is the updating process? The local Darfur team need to be empowered with the countless tools innovations that have been successful over the years, multipurpose tools going back to 1920s.

Another vital part of the food security work is **agro processing, and post harvest storage techniques**, there are issues of quality control to be addressed like the incidence of aflatoxin in ground nuts.

By the way WFP has blocked local supply of cooking oil from groundnuts, official information and approval on nutritional additives required for the oil for food aid distribution have not been released despite 9 written requests in 6 years.

Symonds proposes a **big problem tree analysis** with all N Darfur power movers we can convene.

What are the self sustaining options within per-view of PA? He seems to like the Aim 3 stuff most:

- ⇒ Woodless technologies – building regulations to be amended
- ⇒ Soil testing and brick testing.
- ⇒ Water supply for brick making.
- ⇒ Water harvesting techniques on all government buildings
- ⇒ Construction programme for water harvesting dams incorporating reforestation for shading.

Annex 9 Recommendations on paravet sustainability from Dr. Ibnoaf, Ministerial Advisor, Science and Technology

An evaluation carried out for Practical Action on paravets found that they are self employed on the basis of knowledge of both animal and human treatment. Paravets often find themselves treating human wounds, difficult births etc. The potential constraints to wider adoption are the opinion of official vet service on paravet services and the danger that number of people trained in a specific community exceeds a certain level leading to oversupply and destroying the viability of self-employment.

The curriculum of veterinary training contains animal health and some husbandry – e.g. restraint techniques. However, the time available for the course is too short. Paravets are requesting advanced training. Women are doing as well as men. Tools have to be provided – a medical kit, as part of the trust and recognition process. NGOs should also train on nutrition and pasture management. The latter used to be done by tribal leaders but it all broke down as local officials never took the responsibility when it was allocated to them.

Some legislation and guidelines are required on paravets there could be useful policy work from Practical Action. There needs to be state level lobbying with the federal ministry to issue new guidelines. Paravets cannot continue unrecognised in the local government system. They are providing a public service not provided by the government. A policy review should not be the exclusive responsibility of vets – they are part of the problem at the moment. The process should encourage trust building and democratisation. The private sector will not be a competitor at the moment – in fact only spread of paravets can build up presence of the private sector as they act as veterinary drug distributors.