ASSESSMENT REPORT
COMMUNITY BASED ANIMAL HEALTH SERVICES
(WITH PARTICULAR REFERENCE TO COMMUNITY BASED ANIMAL HEALTH WORKERS SERVICES)

South Sudan, January 2009

Dr Athman Mravili (Team Leader), Banak Joshua, Purna Chhetri, Simon Baka, Louis Kayanga David Awok, and Mark Antioko

Sudan Productive Capacity Recovery Programme (SPCRP) South Sudan
OSRO/SUD/623/MUL
(Capacity Building Component)
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ACRONYMS

AHA     Animal Health Auxiliary
BQ     Black Quarter
CAHWs    Community Animal Health Workers
CBAHP    Community – based Animal Health Program
CBPP    Contagious Bovine Pleuropneumonia
CPA    Comprehensive Peace Agreement
EC    European Commission
FFS    Farmer Field Schools
FMD    Foot and Mouth Disease
GNU    Government of National Unity
GoSS    Government of south Sudan
IDP    Internal Displaced People
HS    Hemorrhagic Septicaemia
LESP    Livestock Epidemiological Surveillance Project
LRA    Lord’s Resistance Army
MARF    Ministry of Animal Resources and Fisheries
MDTF    Multi donor Trust Fund
MLLTC    Marial Lou Livestock Training centre
NCD    New Castle Disease
NGO    Non – Governmental Organization
OIE    Organization for control of Epizootics
OLS    Operation lifeline Sudan
PPR    Pests des Petites Ruminants
RP    Rinderpest Project
SAFDP    Support to Agriculture and Forestry Development
SIFSIA    Sudan Institutional Capacity Programme Food Security Information for Action
SP    Stockperson
SPCRP    Sudan Productive Capacity Recovery Program
SPLM    Sudan Population Liberation Army
UNICEF    United Nations International Children Emergency Fund
VCC    Village Coordination Committee
VSF – B    Vétérinaires sans Frontières Belgium
VSF – G    Vétérinaires sans Frontières Germany
VSF – SUISSE    Vétérinaires sans Frontières Suisse
WOTAP    Women Training & Promotion
Executive Summary

This report presents findings of an assessment carried out in January 2009. The aim of the assessment was to look into the prospects, constraints and sustainability of animal health services in South Sudan with particular reference to community based animal health workers.

The study was commissioned by the Sudan Productive Capacity Recovery Programme (SPCRP), South Sudan as part of developing a strategy to strengthen and sustain animal health services at the grassroots level.

SPCRP is a joint venture between the Government of Sudan and European Commission with two components - the capacity development component and model projects. The capacity development component is being implemented by FAO and the model projects by GTZ-International Services. The capacity building component includes the human/physical capacity building and rural advisory services. Human and physical capacity development aims at refurbishing offices, provision of equipment, vehicles plus operating expenses including human resource while rural advisory services respond to the needs of rural communities and non-state actors. These include group based advisory services and in particular the Farmer Field Schools (FFS), community based animal health services and supporting the emergence of private institutions and rural businesses and market organizations. It is within the framework of rural advisory services this study was commissioned.

The assessment team comprised of seven members – 3 senior officials from the Ministry of Animal Resources and Fisheries (MARF), 2 FAO-hired consultants, and 2 SPCRP staff form rural development component. The methodology adopted a variety of techniques. Data were collected from primary and secondary sources. Focussed group discussions were held with State Ministry officials, extension officers, community based animal health workers, cattle keepers, veterinary medicine suppliers and NGOs involved in animal health services. In Juba meetings were held with relevant officials from the Ministry, SPCRP staff and other projects such as SIFSIA, Emergency Programme, GTZ –IS livestock project and NGOs.

The findings revealed that at the grassroots level community based animal health workers continue to play an important role in treating diseases. They were instrumental in eradicating Rinderpest, a major livestock disease, from South Sudan. In fact the CAHWs were strategically employed to eradicate Rinderpest. Thus, with the successful eradication of Rinderpest and emergence of governance following the signing of CPA in 2005 the role and importance of community based animal health workers diminished. The cessation of Rinderpest eradication programme also meant the discontinuation of financial and development support to CAHWs except for the few who were retained by the State Ministries and those supported by NGOs. Since the CAHWs were trained and deployed with the intention of eradicating Rinderpest their employment was not articulated nor budgeted on long term basis. Although Rinderpest has been eradicated from South Sudan there are diseases such as Contagious Bovine pleuropneumonia (CBPP), Black quarter (BQ), Anthrax, Haemorrhagic septicemia (HS) and Peste des petits ruminant (PPR) that pose a threat to the livestock sector. The lack of diagnostic facilities in the field has made disease identification and treatment even more difficult.

CAHWs are respected and credible individual from local communities who are chosen often by village and NGOs through a democratic process. While some are literate others are only oral. They were provided with a two-week training initially and handed over a tool kit which comprised of basic medicines, syringes and sometimes bicycle. About 1500 to 2000 CAHWs were trained in the last 20 years of which about 38 per cent have dropped out. This is because the CAHWs, who were paid a monthly remuneration before 2005, when they were employed by NGOs, are no longer provided the salary. With local communities not willing to pay services of CAHWs as it was considered social obligation and public good NGOs are experimenting to recover the cost by building service into the selling price of drugs. As this model has been introduced recently it is too early to say whether this
model is going to work or not. The lack of business skills/orientation of CAHWs and a heavy subsidy by NGOs supporting has made it necessary to observe this model for few more years before any conclusion can be made.

As far as community perception is concerned they are very happy with the services provided by the CAHWs. CAHWs on the other hand are demoralized as they no longer see them as a part of national organ (fighting Rinderpest was a national campaign) and not receiving refresher training (except those supported by some NGOs) and financial support – the two incentives and motivating factors that kept the CAHWs going.

Drug supply chain in South Sudan is weak at the moment. Long distance, bad roads and inadequate private sector involvement in livestock system has made the supply of drugs and other inputs expensive, unreliable and difficult. Private sector involvement in livestock chain in particular is almost marginal.

At the State level the lack of adequately trained human resources, financial constraints and logistical problems have impeded in development of the livestock sector. Monitoring and supervision from the States is very weak. This has resulted in the loss of contact between field workers such as CAHWs and Supervisors and State Veterinary doctors and Animal Production Supervisors. Training, even if they are carried out, still follow the same old curricula which are now in dire needs of revising it based on ground realities. Marial Lou, an institute in the State of Warrap that conducts various training courses is now in the process of being handed over to the Government by Veterinary Sans Frontierers – Belgium. In view of financial constraints facing the south Sudan it is not clear as to whether or not the institute will be able to run as it did before.

The government of south Sudan plans to private the services of CAHWs. But plans are yet to be put into place to see how this policy can be affected. In this context there is a need to clearly define and finalize the draft research and extension policy for livestock services.

Some of the recommendations of this assessment include: 1) the continuation of support to active CAHWs through provision of refresher training based on real needs, 2) provision of tool kit to equip them once again with proper tools required to provide services, 3) train them in business skills so that they are able to recover cost for their services. 4) formation of CAHWs association to enable them to raise their voice, 5) engaging them in national campaigns such as tick control, vaccination or disease surveillances, 6) linking them up with other chain actors, and legitimizing the services of CAHWs.

At the State level, through the capacity building component of SPCRP there is a need to train the veterinary and animal production officers and extension agents in various skills including group dynamics. There is a need to finalize research and extension policy, standardize training curricula, monitoring systems and mainstreaming drug supply system including quality control and assurance. At the project level SPCRP will have to help the State Ministries in instituting good monitoring and follow up systems, establish and strengthen sharing and coordinating platforms to include key chain actors including representatives of community animal health workers.

The entry point activities for SPCRP are: 1) identification and training of active CAHWs, 2) initiate social mobilization and awareness raising activities for important disease and pest identified in cattle camps, 3) help the government to standardize training curricula, 4) train State extension and veterinary staff in skills already identified in capacity needs assessment, 5) identify and link key livestock chain actors and 6) assist the MARF in finalizing the draft livestock extension policy.
SECTION 1: INTRODUCTION

The signing of the Comprehensive Peace Agreement (CPA) on the 9th of January 2005 in Nairobi between the government of Sudan and the SPLM was followed by the creation of the Government of Southern Sudan which will lead for an interim period of 6 years before a referendum to be held in 2011 which will decide whether or not the north and south Sudan will stay united or separate. This government is trying to set up authority and governance in an area of 650,000 square km consisting of ten States Central Equatoria, Western Equatoria, Eastern Equatoria, Northern Bahar El Ghazal, Western Bahar El Ghazal, Lakes, Warrap, Jonglei, Unity State and Upper Nile.

South Sudan has is bordered by the Central African Republic, Chad, the Democratic Republic of Congo, Uganda, Kenya, and Ethiopia. It is divided into several ecological zones from rainforest, flood plains, to semi-desert landscape.

The population, estimated to be between 7.5 and 9.7 million (UNFPA, 2006), is composed of several tribes such as the Dinka, the Nuer, Jurbel, Mundari, Boya and Toosa among others. A general population census is going on right now and the results are expected to be released very soon. This census has been agreed within the CPA as a tool (among others) "for sustainability of peace and the basis of power and wealth sharing and elections, as well as the 2011 referendum" - CPA

The livestock system in South Sudan in general is based on agro-pastoral and pastoral exploitation with a cattle population estimated to be approximately 9 million, plus 8 million of sheep and Goats.

Notwithstanding the signing of the CPA, development in South Sudan is impeded by several factors such as desertification, spells of drought as well as erratic rainfall, floods and residual armed conflicts mainly in the State of Western Equatoria. All these factors pose serious challenges to the nascent civil authority despite the hope created by oil revenue.

In this context international donors have committed to support development effort of the Government of South Sudan through important investment in the sector of good governance, capacity building, infrastructure, food security among others. Funded by the EC, the Sudan Productive Capacity Recovery Programme is expected to contribute to the poverty reduction strategy and enhance food security. The capacity building component of the SPCRP programme which is being implemented by FAO embraces support to Rural Livelihoods through the provision of key rural services including training of CAHWs.

This mission explored the modalities to build up a meaningful support to the CAHWs system, by assessing the current situation and making proposals for improvement.

The report has been divided into 5 sections. Section 1 introduces the report and SPCRP and its purpose in a general. The purpose of the assessment, the terms of references and methodologies are explained in Section 2. Section 3 details the findings in relation to CAHWs programme and its rationale, the core of this mission. Finally, Section 4 and 5 presents recommendations and conclusions. Annex 1 provides the what is and what ought to be situation in a matrix while detailed training needs are outlined in Annex 2.
1.1 Livestock in South Sudan

1.1.1 The importance of the livestock sector

Livestock constitutes a major contributor to the economy and livelihoods of large population in southern Sudan with more than 75% of daily food subsistence drawn directly or indirectly from livestock and livestock products. Among others animals, the communities mainly keep cattle, goats, sheep and poultry.

Table 1. Estimate of livestock population in Sudan 2004

<table>
<thead>
<tr>
<th>s/n</th>
<th>Species</th>
<th>Estimation at national level</th>
<th>Estimation in South Sudan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cattle</td>
<td>N/A</td>
<td>9.000000</td>
</tr>
<tr>
<td>2</td>
<td>Sheep</td>
<td>46 095 000</td>
<td>2000 000</td>
</tr>
<tr>
<td>3</td>
<td>Goat</td>
<td>38 508 000</td>
<td>6.6000 00</td>
</tr>
<tr>
<td>4</td>
<td>Poultry</td>
<td>37 000 000</td>
<td>4 000 000</td>
</tr>
</tbody>
</table>

Source: global cassava development strategy 2004

1.1.2 Livestock systems

Like other dry land countries livestock production systems in the big part of southern Sudan is influenced by the pattern and distribution of rainfall. In the areas the mission visited livestock keepers were found to practice agropastoralism and transhumant pastoralism where pastoralist groups, mainly Nuer and Dinka follow seasonal movements as the flood waters rise and fall. Looking for water points in grazing lands is critical in this model of livestock keeping.

Basically the transhumance movement is organized from good dry season grazing areas called (Toic) when the rains begin and vegetation over covered by water to come back to toic with the receding of floods.

Other sophisticated movements are driven by the tsetse population where in raining season the number of tsetse rise in highland infested area forcing herds to move to the lowlands.

Complex movements have also been identified between the internal and external borders. For example, in Aweil areas in Northern Bahr Ghazal the nomadic Arabs mainly the Felata come as far as from Chad and Central Africa Republic to search for pastures and water for the livestock. The Bagara tribes in Kordofan trek a long distance to converge in the same areas along the toic, all moving into the south during the dry season.

The mission also recognized the growing importance of small cattle herds and small species livestock in settlements around cities where the system is combined with small vegetable growing scheme or/and sorghum production.

1.1.3 Major constraint to livestock production in Southern Sudan

Despite its potential growth the livestock sector in southern Sudan remained neglected for many years diverted due to strategic priorities. Nowadays the government relies on it as one of the assets held by the Sudan. However livestock production is confronted with many challenges that undermine its development:

- Health animal related constraints
The mission learned that among others livestock diseases Contagious Bovine pleuropneumonia (CBPP), Black quarter (BQ), Anthrax, Haemorrhagic septicaemia (HS) and Peste des petits ruminant (PPR) were the most infectious livestock diseases threatening the production magnitude of livestock in these areas. During group interviews stakeholders informed that since the departure of the supporting NGOs, outbreaks of diseases have been on the rise in the region particularly (CBPP, BQ, HS and PPR). It was reported that just in a single outbreak alone in December 2008 more than 500 heads of cattle were lost to BQ outbreak in Nyamlel County.

However it is to be noted that only diseases with obvious symptoms are reported by farmers and CAHWs. For example, tick-borne diseases which are often manifested by discreet and devastating symptoms are rarely identified. This illustrates the problem of laboratory diagnostic capacity in the country and the lack of a broader epidemiological analysis.

Despite the successful eradication of Rinderpest there are other diseases that continue to challenge the development of livestock in southern Sudan. Yet some of those diseases are manageable with an intensified and sustained immunization campaigns (for example against CBPP) or by systematising prevention programs (tsetse control, tick-borne diseases etc).

**Recurrent drought and poor pasture management.**

It is believed that there is enough pasture for livestock despite the return movements of IDPs and refugees following the signing of the CPA. However, recurrent droughts in recent years have pushed pastoralist communities to concentrate their herds on the scarce dry season pastures (Toics and floodplains) thus creating conflicts over the access right to these lands. In addition, conflicts between farmers and pastoralists, cattle raiding so common in Sudan, have been exacerbated by the global poverty and the lack of community dialogue (inclusive planning).

**Poor institutional capacity and policies**

The institutional deficiencies manifest in itself the weakness of the prevention and care system, as well as the veterinary legislation. Moreover the lack of initiative on investments in production and animal products transformation is not likely to favour the growth of the livestock sector. The lack of human, technical and financial resources limit any substantial achievement on animal health in Southern Sudan. Added to this is the absence of policy/strategic direction on livestock extension services.

1.2 **The SPCRP and its context**

The war in South Sudan has resulted in the death of almost 2 million people, injuring many, and displacing nearly 4 million, both within Sudan (IDPs) and outside (refugees). The signing of the CPA is accompanied by the sharing of power and resources between the GNU (Government of National Unity) and the GOSS (Government of South Sudan) in the form of an institutional arrangement of "one country, two governments arrangement". Relative autonomy is guaranteed for a transition period of 6 years (until 2011) after which a referendum on self-determination to stay united or separate will be held. This institutional arrangement has enabled the SPLM to start establishing an administration and developing programmes and policies. It is as part of this process that donors are providing assistance to finance reconstruction and development (demining, road building, governance, rural development, etc.). Thus, donors have established a Multi Donor Trust Fund (MDTF) in the North as well as in the South. The MDTF is administered by the World Bank. MDTF is channelled through NGOs recovery and development projects on
basic infrastructure, provision of social services, capacity building, etc. MDTF has funded the Support to Agriculture and Forestry Development Project (SAFDP) with some similar activities with SPCRP in some sectors. However, the areas covered by the two programmes are different.

The Sudan Productive Capacity Recovery Programme (SPCRP) is a joint venture between the Government of South Sudan and European Commission. The programme is being implemented by the United Nations Food and Agriculture Organization.

SPCRP is a national programme covering both North and South Sudan. The main aim of the programme is to contribute to reduction in level of poverty and food insecurity by 1) enhancing income generating activities in agriculture, livestock production and off-farm rural activities that primarily benefit poor households and 2) strengthening the capacity of local administrations and non state actors to maintain and further develop them.

SPCRP activities are grouped into two major components:

a) A capacity building component to build human, organizational and physical capacity of public and private institutions.
b) Support to rural livelihoods through financing and implementing investment projects in the selected states and counties/localities. This will include two sub-components:
   a. Eight model investment projects, 4 in north and 4 in south Sudan
   b. A micro project programme.

The purpose of capacity building component is to build human, organizational, and physical capacities of key emerging public and private institutions in the selected states and counties in order to provide administrative, advisory and strategic guidance to the rural areas. The capacity building component includes the following two main sub components:

- Provision of the necessary physical means such as office refurbishing, equipment, vehicles plus operating expenses until the regular budget mechanisms are established. It also includes human resource development programme on priority areas including programme and project cycle management, computer literacy, conflict prevention, public administration, strategic planning, technical issues and other topics to be identified.

- Developing key services responding to the needs of rural communities and non state actors through rural advisory sub component. These include group based advisory services and in particular the Farmer Field Schools (FFS), strengthening community based animal health networks, assisting the emergence of private institutions and rural businesses and market organizations.

Rural advisory services sub component aims to support productive activities in the rural areas of South Sudan by:

- Implementation of agricultural support services based on group-based practical-oriented field study programmes such as the Farmer Field Schools (FFS) approach to applied research and agricultural extension. A network of FFS will be developed particularly in the context of providing agricultural support services to the Model Projects and possibly the Micro Project Programme, as a vehicle for responding to needs expressed by groups of farmers of a technical or other nature.

- Strengthening the technical and managerial skills and supporting new community based animal health workers focusing on livestock production through availability of animal
health services and institutionalizing and sustaining the services of Community based animal health workers services (CAHWs).

- Supporting the private institutions and rural businesses to capacitate non state actors such as development corporations, private sector organizations, cooperatives and farmers, pastoralist and fishers’ union to develop a mechanism to support investment in agribusiness initiatives and marketing systems. The project will provide training, advice and expertise to develop business plans as well as facilitated access to rural finance.

### Table 2. States in which SPCRP is involved in South Sudan.

<table>
<thead>
<tr>
<th>SPCRP States</th>
<th>MDTF States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Equatoria</td>
<td>Upper Nile</td>
</tr>
<tr>
<td>Western Bahar El Ghazal</td>
<td>Jonglei</td>
</tr>
<tr>
<td>Northern Bahar El Ghazal</td>
<td>Eastern equatorial</td>
</tr>
<tr>
<td>Lakes</td>
<td>Central Equatoria</td>
</tr>
<tr>
<td>Warrap</td>
<td>Unity</td>
</tr>
</tbody>
</table>

In the rural development sector in general and livestock production in particular, the MDTF finances projects through various NGOs, government and UN agencies, including the Livestock and Fisheries Development Project that has four main components:

- Institutional capacity Building
- Animal health Service delivery through NGOs (VSF B and VSF G)
- Animal production and marketing
- Fisheries

Although the two programmes are being implemented in two different areas of intervention, there is a risk of the SPCRP and the MDTF projects ending up developing different strategies for the same issues if not coordinated well. This risk is high in capacity building and in the Animal Health Service delivery component. For that reason, the FAO and the stakeholders need to interact and help the MARF establish a platform for dialogues.

Other bilateral and multilateral funds are also established in South Sudan. With regard to livestock, it is necessary to keep a commitment to working closely and sharing information systematically with the following projects:

- **FAO Emergency Programme**

The FAO also conducts activities related to animal husbandry, and it would therefore make sense to establish coordination with the SPCRP for mutual benefits. Indeed, despite the limited financial capacity at present, the FAO Emergency Programme conducts an animal health programme, including support for the training of AHA, the establishment and maintenance of a cold chain, the importation and distribution of vaccines through NGOs and the MARF. This programme employs 3 veterinarians: 1 based in Torit, another in Malakal, and the 3rd in Juba, who also covers Aweil. From the discussions with the Senior Programme Coordinator, it appears that it is difficult but necessary to transfer the management of the cold chain and the training of refrigeration technicians on maintenance to the Ministry of Animal Resources and Forestry (MARF). A possible way forward on this issue is exposed under the paragraph on recommendations after having listening to the Senior Programme Manager of FAO Emergency in Juba.

- **SIFSIA**
SIIFSIA is an agricultural information project located in the same premises as the SPCRP; its activities could benefit the MARF in general and the project in particular. For example, MARF can be introduced to plotting grazing coverage, anticipating conflict zones, determining transhumance routes and using SIFSIA maps and data to facilitate dialogue between herders themselves on the one hand and livestock keepers and farmers on the other hand.

- **Model projects**

It is a component of the SPCRP, and it should be easy to exchange information and harmonize the actions taken. In marketing as well as in production, the model projects component would be expected to mobilize veterinary services and/or provide advice for changes in policy development. Here there is a need to find synergies among actors from different components. Recently concluded livestock assessment carried out by the GTZ-IS dealing with model projects have clearly identified the areas of collaboration.

- **Projects conducted by international NGOs**

VSF B, VSF-G, Farm Africa, OXFAM among others are all conducting food security programmes with livestock as one of the major components. While some are pioneers' in the CAHWs system in south Sudan others are testing new strategies to sustain the CAHWs scheme by privatizing their services.

The SPCRP (Animal Health Services Component) is a programme that on the one hand has to learn from past experiences, including Operation Lifeline Sudan (OLS) in its food security aspect, which was led by FAO and, on the other hand coordinate with ongoing projects supported by various NGOs (Oxfam, VSF B, VSF G, VSF-Suisse).

**SECTION 2: OBJECTIVE OF THE MISSION**

2.1 **Recall of the terms of reference**

The specific objectives of the mission are outlined as follow:

- Assess and document the profile (educational background, training courses attended, demographic background, experience), motivation and needs of CAHWs contributing to the development of capacity/skill development plan;
- Identify opportunities and constraints affecting community based animal health services from both technical and financial perspectives. Assess whether or not the services of CAHWs are financially sustainable. If not, what can be done to make their services sustainable so as to not depend on external funding.
- Assess community perception and satisfaction of services provided by local communities;
- Assess the physical, technical and managerial needs of CAHWs to provide effective services;
- Assess the situation of cold chain facilities and actions needed to improve the chain/situation;
- Determine the position of GosSS and SMOAARIs regarding the future of CAHWs; how can CAHWs services be institutionalized?
- Identify opportunities for collaboration with livestock model project implemented by SPCRP
- Identify key non state partners involved in livestock enterprise
- Make inventory of institutions that are capable of providing basic and advanced training to CAHWs within the country and provide the relevant platform for synergy with government veterinary service, which will be expected to supervise the activities of the CAHWs.

2.2 Methodology

The mission covered five States in which SPCRP is involved. They are Western Bahar El Ghazal, Northern Bahar El Ghazal, Warrap, Lakes and Western Equatoria. The following factors have influenced the choice of the methodology and the mission procedure:

(i) Short duration of the assignment (only 13 days of field study)
(ii) Long distances between different localities.
(iii) Logistical constraints, namely the timing and availability of domestic flights in Sudan
(iv) Security problems. For example, in the case of Yambio in Western Equatoria attacks by LRA restricted the movement of the mission resulting in limited interaction with CAHWs who are based in the field.

Each State was allocated 3 to 4 days and every effort was placed to meet as many key players and major stakeholders as possible. This was possible only by splitting the core team of seven members to two sub teams. In order to ensure consistency, reliability and validity the core team carried out the assessment together as one team in the State of Western Bahr Ghazal. Only after that the team was split into two sub teams which went on to cover various States as stated below:

Core team = Western Bahr Ghazal
Team 1 = Warrap and Lakes
Team 2 = Northern Bahr Ghazal and Western Equatoria.

Team 1 was led by the Chief Consultant (Dr Athman Mravili, consultant) and composed of Purna Chehtri (extension specialist, SPCRP) and Mr Louis Kayanga (Director of Special Project at MARF) while the second team led by Dr. Joshua Banak (Second Consultant) composed of Dr. David S. Adwok (Director for veterinary public health & food safety) Mark W. Antioko (Extension Officer, MARF) and Simon D. Baka (Rural development specialist, SPCRP).

The methodology used consisted of the following steps:

(i) Consultations and review of the literature focused mainly on similar programmes developed in other countries:
   (For example Afghanistan, Ghana Tanzania, Cambodia), a review of documents on livestock projects implemented in South Sudan, including evaluations and technical reports

(ii) Focus group meetings with stakeholders with the same profile who are involved in the CAHW system in South Sudan
These meetings involved the CAHWs themselves, the veterinary services of the states (Directors, Vet Coordinators, Supervisors, Stockpersons, etc.), livestock keepers encountered in cattle camps and livestock markets, and several NGOs involved in animal husbandry.

(iii) **Key Informant Interviews and group Interviews: a questionnaire was developed to conduct semi structured interviews**

These interviews were conducted on a sample of persons practicing veterinary care, including CAHWs and supervisors. It should be noted that in addition to their supervisory role, the Animal Health Auxiliaries (AHA) and Stock Persons (SP) are also approached by farmers to treat or vaccinate their livestock.

(iv) **A session was organized everyday for the pooling and comparison of the information collected**

At the end of the field visits, a meeting with the two mission teams was organized in SPCRP Office in Juba for a final debriefing and the listing of recommendations.

### SECTION 3: THE CAHWS PROGRAMME: RATIONALE AND ACTORS INVOLVED

#### 3.1 Current Status of CAHWs

According to various sources, 1500 to 2000 CAHWs have been trained since 1998 in South Sudan. The genesis of CAHWs services was the launching of national vaccination campaigns to eradicate Rinderpest. According to the office of veterinary services in the targeted States and NGOs the number of traceable CAHWs is as follows.

<table>
<thead>
<tr>
<th>States</th>
<th>CAHWS trained</th>
<th>Drop out</th>
<th>%</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Bahar el Ghazal</td>
<td>196</td>
<td>80</td>
<td>41%</td>
<td>MARF</td>
</tr>
<tr>
<td>Western Equatoria</td>
<td>74</td>
<td>12</td>
<td>16%</td>
<td>MARF</td>
</tr>
<tr>
<td>Western Bahr El Ghazal</td>
<td>183</td>
<td>100</td>
<td>55%</td>
<td>MARF</td>
</tr>
<tr>
<td>Warrap</td>
<td>248</td>
<td>90</td>
<td>36%</td>
<td>VSF-G/MARF</td>
</tr>
<tr>
<td>Lakes</td>
<td>294</td>
<td>100</td>
<td>34%</td>
<td>OXFAM/MARF</td>
</tr>
<tr>
<td>Total in SPCRP States</td>
<td>995</td>
<td>382</td>
<td>38%</td>
<td></td>
</tr>
</tbody>
</table>


As can be seen from Table 3 above the drop out rate of CAHWs is 38 percent which can be considered high. Inactive CAHWs in this context means those who have stopped reporting and acquiring drugs. CAHWs left the system to embrace different job opportunities. While some are employed by the Directorate of animal resources particularly as supervisors others have joined other governmental departments like the army or other business opportunities.

At that level this drop out rate is quite high but not surprising; high drop out rates were found in other successfully projects too in Bangladesh, Cambodia etc. (IFAD, 1999). Indeed the challenge is how the veterinary services and aid agencies are prepared to monitor this drop out and provide continual training for new community workers.
Training of CAHWs was based on basic animal health knowledge supplemented by notions on the diagnosis of the major animal diseases present in South Sudan. Depending on the operators, the training of the CAHWs lasted 2 to 3 weeks. Once trained, these CAHWs were provided with a tool kit which included drugs and sometimes a bicycle for their travels. The drugs comprised mainly of antibiotics and anti-parasites. The CAHWs treated animals against payment. Of the money collected 60 to 70% went to the structure supplying the drugs, mainly NGOs, as the CAHWs received between 30 to 40% of the payment as remuneration referred to as cost recovery by the NGOs.

For the vaccination, the rates varied significantly and the money was shared as follows: 50% for the vaccinator and 50% to the supporting agency (and eventually for revolving fund). Payment mechanism varied by operators. Different share of percentage and other incentives are granted directly by some operators. Thus some NGOs ended up paying a monthly remuneration from $5 for CAHW to $20 and $25 for AHA and stockperson respectively, upon presentation of a report.

3.2 Role of CAHWs in the animal health system in Sudan

Interviews with different stakeholder and livestock keepers clearly revealed that CAHWs are very instrumental in providing services especially in the hard-to-reach areas where government services are lacking at best.

- Role in the provision of health services

Sudan has the largest livestock population in Africa, and South Sudan. Comprised of 10 States, South Sudan has a vast territory that is not easily accessible. Providing veterinary services to the thousands of livestock keepers in these areas cannot be envisaged in the short and medium term without an outreach system established in the community and regulated by the veterinary services. The CAHWs system is therefore very relevant and critical here.

The mission attempted to estimate the impact of CAHWs on animal health in the locations visited. It adopted a methodology using five well defined qualitative criteria that contributed in producing positive impact on animal health. The interviews helped in verifying the level of CAHW's apparent technical competence, the geographical and ethnic coverage including how fair the CAHW were serving the people in their area, the scope of their activities, the community support they enjoyed, as well as motivation and profitability. These aspects are essential for a CAHW to create a positive impact on livestock (J. Hanks, R. Oakeley, H.Opoku, S. Dasebu, J. Asaga, 1999). The interviewers had to form their personal opinion and apply a score per indicator using a semi structured questionnaire (Appendix 1). The scoring system is explained in the following table. In addition, anecdotes, group meetings, and comparisons of responses were used to generate supplementary information on the CAHW's activities.
As indicated earlier, due to logistical and security reasons it was not possible to interview a representative sample particularly in the State of Western Equatoria. However a total of 46 CAHWs during the mission provided some useful information. The result which shows a positive impact of CAHWs work should therefore be considered only as a trend. Additional information collected from herders and other stakeholders confirmed this trend.

**The apparent technical competence of CAHWs**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very poor</td>
</tr>
<tr>
<td>Apparent technical competence</td>
<td>1</td>
</tr>
<tr>
<td>Geographical and ethnical coverage</td>
<td></td>
</tr>
<tr>
<td>Extent of activities</td>
<td></td>
</tr>
<tr>
<td>Community support</td>
<td></td>
</tr>
<tr>
<td>Motivation and profitability</td>
<td></td>
</tr>
</tbody>
</table>

The apparent technical competence is the competence reasonably estimated as plausible. Experts came up with the concept of *apparent technical capacity* (University of Reading, 1999) as it's considered inappropriate and practically difficult to test the technical capabilities of CAHWs during a short evaluation mission. For instance it was not possible to always observe the CAHW on duty. The technical competence has therefore been evaluated solely based on technical information from the CAHW, the extent of their initial training, data of performance from the supervisors or from vet staff etc. Interviewer will form his own opinion and quote whether the CAHW appears competent or not. Indeed it is from the discussions on issues of general knowledge and technical details that the assessors based their opinion on the technical competence of CAHWs. From the first glance it seemed that the level of technical competence is still good with more than 60% of respondents having a level of technical competence estimated as good to very good. This technical competence among initially low-educated people could deteriorate rapidly if an upgrade training programme is not provided on a regular basis.
The estimated coverage was found to be satisfactory in considering that the area allocated to a CAHW is properly covered. Sixty-six per cent of interviewed CAHWs had "good" to "very good" coverage. The interview measures here the spatial preference from the CAHW location to their clients. If CAHWs working in the urban periphery customers are from diverse ethnic groups, those in remote areas serve more their particular communities. However, this good coverage should be seen in qualitative context. Indeed the mission questions the limitation of a CAHW to serve in one location (Payam). This situation limits in some area the potential market of the community worker and thus its revenue and profit.

The scope of a CAHW's activities in the concerned areas is limited to animal treatment, medicine based prevention measures, vaccinations and participation in surveillance programmes. On this basis 50% of respondents were found to have diversified activities. It is however important to keep in mind that the potential for diversification is still important and untapped especially in poultry, nutrition, or in prophylactic measures. For example in the control of different animal
parasites CAHWs are commonly using Ivermectin (injection) which is surely an effective treatment with a broad-spectrum targeting many ecto-parasites and some internal parasites, but poorly adapted for use in large cattle herds and for prevention (unlike the use of spray or per treatments).

**The community support**

![Community support chart]

The "community support" is probably the most verified criterion and confirmed by the herders opinion. Seventy-nine per cent of respondents reported to enjoy good to very good community support. This is linked to the selection criteria of a CAHW that give an important role in the "acceptance" of the candidate by the community. One of the peripheral consequences deriving from this situation is the strong relationship established between the clients and CAHWs hampering sometime the monetization of their services.

**Motivation and Profitability**

![Motivation and profitability chart]

"Motivation and profitability" is a crucial indicator to measure the impact of CAHW. In this case we can note a deterioration of that indicator. Indeed, the continuation of incentives and benefits by NGO are no longer guaranteed. Vaccination campaigns are not supported as it used to be before. The CAHWs are no longer getting money for their services (68% are rated poor or poor to average on motivation and profitability). According to the focus groups meetings, "motivation"
was found to be linked to the capacity of the vet administration to supervise CAHWs activities. Behind the CAHWs declarations there is a need for renewal of their technical knowledge and a deep demand to be associated with the State programmes (surveillance, vaccination etc) to secure additional revenues.

**General Impact**

<table>
<thead>
<tr>
<th>TOTAL IMPACT</th>
<th>Poor</th>
<th>Borderline</th>
<th>Good</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7%</td>
<td>20%</td>
<td>73%</td>
</tr>
</tbody>
</table>

Based on the scores assigned to each indicator below we have created 3 classes: a class of CAHWs whose impact on livestock is considered as Poor, those who are called Borderline and a 3rd class form by those whose impact is ranked as Good.

It is encouraging to see that the majority of CAHWs (73%) are still delivering services that can be qualified with a positive impact on animal health and potentially on the entire livestock production.

- Role of CAHWs in the prevention and control of major epidemic diseases

During the war and under the coordination of emergency programmes including the OLS, the protection of livestock was an important source of revenue for the survival of the Sudanese people and therefore was considered fundamental. Thus, during this period, Rinderpest control was intensified. Mass vaccination campaigns required the training of hundreds of CAHWs. At the beginning, the CAHWs trained in South Sudan were primarily vaccinators. With successful eradication South Sudan has stopped Rinderpest vaccination programme since 2006. Today, the CAHWs still have a role in organizing the vaccination campaigns, namely against contagious bovine Pleuropneumonia (CBPP), Bovine hemorrhagic septicaemia, BHS, Anthrax to name a few. But there is a deterioration in the organization of the logistic system: cold chain are confined to the State level, the weak mobilization of livestock keepers and CAHWs probably due to the fact that there are no additional incentives compared to the emergency period and the sensitization campaigns. There is a need to maintain a minimum prevention programme through a vaccination calendar that is known and respected, through the sensitization of livestock keepers so that they can organize themselves and round up the livestock in areas that are not too far from the centres where the vaccines are stocked, thus allowing the CAHWs to make use of icebox. Due to the limited resources of the SPCRP, it is not possible to support routine immunization campaigns, except at the request of a group of livestock keepers and with the collaboration of the veterinary services in the state for training and awareness purpose. However, it is possible to envisage the
improvement of the existing equipment by supplying fridges for the storage of vaccines in areas of critical importance.

- **Role in epidemiological surveillance and the reporting of disease outbreak**

Like in most poor countries with a low level of infrastructure, establishing an epidemiological surveillance system is a challenge in Sudan. The lack of human resources, roads, and means of transport for veterinary officers make such a surveillance system impossible. However, the CAHWs played a key role in monitoring Rinderpest when operators were giving them massive support in their activities. Today, there is a need to harmonize the reporting tools, pay for the surveillance activities and ensure that the information collected is properly processed in Juba.

- **The role of CAHWs in the vaccination campaigns**

It would never have been possible to attain the current status of Rinderpest control without the considerable involvement of the CAHWs. They provide information to livestock keepers, agree with them on the location of the cattle camps, get the vaccines from the regional veterinary office or the office of the NGO, and carry out the vaccination with the assistance and under the control of the supervisor. Without the CAHWs, it would be impossible to have that vaccination coverage, even if it were limited to major diseases only. There is still some work to be done on securing the supply of vaccines, improving information and awareness, and providing logistical improvements at the cattle camps.

Many stakeholders rely on CAHWs either for carrying out specific veterinary activities or for the implementation of animal husbandry and food security projects. Under the aegis of the FAO and the MARF, meetings on the coordination of livestock activities are held, but apparently not on a regular basis, and practices on the ground show that the recommendations are not harmonized and followed properly. The mission met the following organizations which are among the most active in this sector.

Table 3. NGOs involved in CAHW activities in the visited states

<table>
<thead>
<tr>
<th>No</th>
<th>NGO</th>
<th>Activity</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GTZ</td>
<td>Food security</td>
<td>Wau</td>
</tr>
<tr>
<td>2</td>
<td>Concern International</td>
<td>Food security</td>
<td>Aweil North</td>
</tr>
<tr>
<td>3</td>
<td>World vision</td>
<td>Food security</td>
<td>Yambio</td>
</tr>
<tr>
<td>4</td>
<td>VSF-B</td>
<td>Food security/ Epidemiological surveillance</td>
<td>Warrap</td>
</tr>
<tr>
<td>5</td>
<td>FarmAfrica</td>
<td>Agriculture, Livestock, Women groups support restocking, Access to Water</td>
<td>Aweil Kuajok</td>
</tr>
<tr>
<td>6</td>
<td>WOTAP</td>
<td>Restocking, vegetable promotion, agriculture, IGA</td>
<td>WAU</td>
</tr>
<tr>
<td>7</td>
<td>VSF Germany</td>
<td>Livestock</td>
<td>Warrap</td>
</tr>
<tr>
<td>8</td>
<td>Oxfam GB</td>
<td>Livelihoods Project</td>
<td>Rumbeck</td>
</tr>
</tbody>
</table>


3.3 **Factors affecting CAHW system in Sudan**

In the current situation of the country, one can see that the CAHWs system in Sudan faces difficulties as regards its sustainability and eventually its institutionalization. Through our
discussions and interviews, we realized that a major factor resulting in the deteriorating motivation of CHWs was a loss of fundamental knowledge base. In addition the drug supply system remains precarious. Consequently, there is a significant loss of trained workers, with a high drop out rate. Drop out causes are intrinsic to the system and to Sudan’s specific context which are briefly highlighted below:

- **Lack of supervision and monitoring**

  Once trained, the CHWs provided two important related services. One is to treat animals and prevent diseases and the second is to report the epidemiological facts. This second role could not be assured by CHWs without a proper monitoring system. Monitoring also enables CHWs to feel that they belong to a system, within the public system or with an NGO Programme. The training and role of the supervisors are not harmonised and in many cases supervisors lacked the necessary means to carryout their duties. In Western Bahar El Ghazal for example, supervision is particularly weak due to lack of logistic and organisational capacities. There is inadequate follow-up of CHWs both in terms of coverage and also in qualitative terms. Supporting the supervision and monitoring of CHWs is certainly the first step to strengthen the system so that at least in the places where CHWs remain active.

- **Lack of refresher training**

  It is important to note that CHWs do not by definition have academic capacities to self maintain the knowledge gained. And the nature of their training, which is built on general health information and pragmatic approaches to diseases, require refresher training to adapt the practices to changing circumstance and needs, recall the basic notions and maintain motivation. Continuing training is an essential safeguard to maintain the knowledge and keep the motivation of the workers as high as possible. It was found that the frequency of trainings courses have been irregular and the content of the courses were left to the discretion of practitioners (NGOs, whose work have to be praised once again).

- **Low level of income**

  It is essential to address the issue of the remuneration of the CHWs through a quick analysis of (i) price formation, (ii) the size of the market (so the scope of the competition), and finally (iii) the economical sustainability of the model.

  (i) **The pricing of the service provided**

  Normally, CHWs are paid just like any other provider of health services for their expertise first, then for the treatment (if any) and the products used if they have been provided by the practitioner. Yet, in the mind of many of the livestock keepers that the mission came across in South Sudan, especially among transhumant livestock keepers, when called for a treatment CHW had to build the cost of services into the selling price of drugs. This is because livestock keepers fail to see why such ‘social services’ should be monetized. However, as they are willing to pay for the drugs CHWs were left with no option but to build the cost into the drugs. Further, since the livestock farmer and the CHW are both from the same community, the treatment is considered as one of the services that community members do and expect from each other (part of social norms). There are times when CHWs are also helped by local communities for other matters. Therefore costing the services which were not monetized before for social and cultural reasons is a difficult one if not impossible. Nevertheless, the price of drugs remain subsidized and even for NGOs like OXFAM where the livestock farmer pays 165% of the purchase price, our calculations show that it only covers the costs of the purchase and transport. This is why the price
paid by the livestock keeper is high, probably due to the source of supply of the drugs (Kenya or Uganda).

(ii) Small market versus high number of CAHWs trained in the same location

It's important to recall that when starting these CAHW training programs, the initial objective was to immunize the maximum number of animals to eradicate Rinderpest. This has led to a massive training of CAHWs. Also, taking part in training entitled to incentives and benefits in kind such as salt and soap which were rare during the war due to the destruction of the economy of southern Sudan. It appears that the willingness to massively vaccinate animals and a strong demand for enrolment in this program to make profits of incentives and other benefits led to the training of a high number of CAHWs than the market can sustain. It now seems wise to think in terms of spatial coverage but also in terms of market because, for a given Payam, often one or 2 CAHWs plus the supervisor, a vet coordinator or even other livestock keepers are all engaged in providing care for animals.

(iii) Economic sustainability of the model

CAHWs are the people chosen by the local community based on their honesty, their reputation and education\(^1\). They do not necessarily have business orientation while the sustainability of their activity requires the ability to manage at least incoming and outgoing funds. Even if NGOs are making an effort in training basics accountancy, the fact remains that the primary purpose of training is to ensure a minimum of health technical competence.

Furthermore, choosing the CAHW in that community with criteria that are related to appreciation and credibility is good to ensure a trustworthy person, but at the same time they are bound by ties of neighbourhood, family and service. In societies where people are so close to each other, service is rarely exchanged against money but is rather mutually rendered. So, it is not surprising to see that the only thing exchanged in this service is confined to the use of drugs.

This led the mission to claim that one of the conditions to make this model sustainable is to set up a reliable supply of drugs system that is cheaper for the CAHW and, consequently, for the livestock farmers.

3.4 Sudan context related causes

(i) End of emergency operations

One factor that has weakened the CAHW system in South Sudan is the legacy of the emergency period. This was a time when many actions were subsidized. Currently, government provides less financial resources for livestock and donors have withdrawn from the sector. It is therefore urgent to rethink how to sustain the CAHWs system and consider expanding their range of activities as well as recognizing their role in delivering public services (additional budget contribution from the State).

\(^1\) Literate at the community level meant someone who had oral knowledge. So ability to read or write was not seen by local communities as a means to measure literacy.
(ii) **End of the Rinderpest vaccination campaign**

The role played by the vaccination against Rinderpest in the inception of the CAHWs Programme was absolutely fundamental as explained in the preceding paragraphs. Today the end of this mass vaccination and the fact that no campaign of this scale is conducted create a shortfall in revenue for the CAHWs.

(iii) **Weakness in the training standard**

Although the training curriculum is officially standardised and based on the VSF Belgium/UNICEF ones, it seems that the frequency and the practical modalities are not strictly followed in the different counties. And it appears that, according to the areas and the operator managing the project training, contents are slightly different. Unlike the training of AHA and stockpersons who are trained in Marial Lou, there is no institutional ownership of the training modalities of the CAHWs.

The Marial Lou Training Centre (MLTC) was established in Tonj County which now falls within the boundaries of Warrap State. VSF B managed the center with the provision of technical support from (1996-2004). But it is now under the supervision of MARF and is managed by a board of directors. The establishment of this centre came as a genuine recognition of community needs assessed during the time of Rinderpest eradication and the implementation of the community-based animal health program in Southern Sudan. The purpose of this centre is to develop, promote and deliver responsive training and technology to enhance sustainable development in the New Sudan. The mission did not visit the Marial Lou training Centre. However, according to VSF-B and based on the last evaluation of the centre conducted under their responsibility, it appears clearly that the Centre is challenged by:

- The lack of financial capacity, as the withdrawal of the supporting NGOs, particularly VSF B, has left a huge gap and MARF is still grappling with institutionalisation and the formulation of policies
- The buildings are in dilapidated condition and need comprehensive rehabilitation (VSF B external evaluation, 2007)
- Poor roads infrastructure hinders movement of logistics activities; the only means of transport during the wet season is by air, which is expensive and not easily affordable.

3.5 **Supplying and distribution of drugs and vaccines**

*Current situation*

The decentralization of animal care through the CAHWs requires a system for the supply of drugs from the supplier up to the CAHW. This was, for a long time, assured exclusively by NGOs or the government, but today the supply of drugs is done in two different manners: on the one hand, there is total control of the logistics and commercial chain by NGOs / UN, and on the other hand there is embryonic private sector. Between these 2 models, there are other more or less sophisticated models and we have to understand their foundations, weaknesses, strengths and lessons.
Channels of distribution and supply of veterinary medicines

- Other countries
- Khartoum
- FAO
- JUBA MARF
- Veterinary Services
- Private pharmacies
- Veterinarians/paravet
- Associative Drugs store (CAHWs/NGOs/NGO/projects office)
- NGO/projects office
- CAHWs
- Livestock keepers
- Drugs
- Vaccine
3.6 Typology of the existing different channels on drug distribution in South Sudan

(i) The model supported by NGOs

The NGO model is based on the resumption of the "drug supply" through an association of CAHWs or, in some areas, through the veterinary coordination committee (VCC). The role of these associative bodies is primarily to set up a cost recovery system and manage the whole supplying chain.

Cost recovered was used to purchase additional drugs, pay for CAHWs’ services and was also used for other developmental activity seen as beneficial by the community.

Management structures in this model are heterogeneous, particularly in the membership of the associations and committees. In any case, it appears that this model is built around the desire to promote democracy, transparency, participatory approaches and social control practices (in pricing) in the associations, rather than to promote a business spirit.

This model can also be seen as a means of sustaining the operation and an exit strategy for the NGOs. However, the associations created are facing many challenges like the lack of business knowledge, inability to meet divergent expectations of their members, and the inherent complexity of the system.

It is striking to note that all the associations created tend to operate in the same way as the NGOs, in terms of drug supply from Nairobi and Kampala. However, it is not sure (far from that) that it is cheaper to transport cargo from Nairobi to Rumbeck than from Khartoum to Rumbeck. While it is understandable that the NGOs probably chose to buy the drugs from East African from where they were operating during the time of insurgency the cost effectiveness and practicality of brining in drugs from Khartoum seemed to have been overlooked or discouraged by factors that this mission is not aware of. It is to be noted that today many consumer goods are supplied from Khartoum by road (with the vagaries that this implies). It is not clear as to why what is possible for sodas, fruit juices and human drugs would not be possible for veterinary products.

In brief, with return of peace following the signing of CPA in South Sudan, the associations created to support the supply of veterinary drugs should seriously analyze the comparative advantages of supply sources rather than replicate a model that used to be appropriate at a given time and for a particular set-up.

(ii) Supply by the government (veterinary services)

Until recently, the authorities provided for veterinary drugs in their budget through the Veterinary Services at State level. These stocks were managed by the Vet coordinators who distributed them to supervisors and CAHWs using the same payment scheme. But, at the same time, vets at state level also provide care, are users of these drugs and are in direct contact with the livestock keepers. Today it seems that the government is shifting its policy to no longer supply drugs to the public sector. It remains that part of the so-called emergency drugs are still provided and used directly by the vet coordinator and sometimes by the supervisors.
(iii) Private pharmacies

In cities such as Wau pharmacies stocking veterinary medicines are emerging and they are selling animal drugs directly to CAHWs, even to livestock keepers. These pharmacies are run by businessmen and they are also operating in the field of human medicine (embedded services). One particular note of interest is that these pharmacies do not sell on credit to trusted CAHWs, unlike in the first 2 models where CAHWs buy drugs and pay later after care and after deducing their profit margin. Most of these private drugs stores bring their supplies from Khartoum or Egypt.

(iv) Vet and other animal care providers

Finally, some official vets and private paravets have parallel activities related to the sale of veterinary drugs with success, thanks to their knowledge of the field and the network of CAHWs they have formed. They sell both directly to livestock keepers to whom they also provide advice, and to the CAHWs and supervisors of their networks. Legislation in South Sudan does not prevent a vet employed by the government of South Sudan to run a pharmacy too.

3.7 Failure of drugs and vaccine supplying chain

So far, Sudan drugs supply in South is highly precarious due to a number of reasons:

- The supplying role is still under the control of the NGO on a project basis and government is pulling out from providing drugs while a strategy for sustainability is yet to be defined.
- Private sector involvement is still very low despite some successful initiatives involving mainly veterinary officials and businessmen. This where the need for clarification in terms of policy to avoid unfair competition is essential.
- Selling prices are still subsidised including in the associations under the NGO support. A part of the logistic chain is being taken into consideration in the current initiatives of privatisation. The real drugs costs are not yet reflected in the selling price of drugs.
- Within the privatisation initiatives conducted by some NGOs in southern Sudan, logistic cost is biased by the drugs sourcing procedures and the NGO set up itself. Thus it is not clear as to whether or not the origin of procurement is lead by the market’s comparative advantage or ongoing convenience and common practices
- Inadequate regulation and quality control where the central government (Juba) lacks capacity to establish norms and policy.
- Lack of cash money in circulation, in some remote areas, is not conducive to privatisation. In that case payment in kind in form of chicken or goat was accepted.
- The CAHW giving credit to the livestock farmer and the pharmacist to the CAHW does not allow dynamism in the commercial drugs sector.

3.8 Livestock keepers and livestock production:

It seems that the development of the animal health system through CAHWs support came at the expense of direct services (by NGOs workers, government technicians, project staff etc) to farmers in livestock production. However, the pastoral communities visited have called for an
attention for their cattle, their social organization and their livestock production systems to secure the necessary support. Exchanges of views with herders in their cattle camps and in the animal auction places, revealed the need for rebalancing aid to direct support to livestock keepers.

Field interviews revealed that the pastoralists and agropastoralists encounter problems that cannot be properly taken into account without working at the level of the livestock keepers. These constraints are:

- The increasing incidence of parasitic diseases, both internal and external parasites, such as tick-borne diseases
- The emergence of contagious diseases due to the increase of transhumance as a consequence of the restored peace and the return of refugees with their animals. (HS, CBPP, PPR, etc).
- The problems of access to particular pasture in the dry season, which causes conflicts between pastoralists and farmers. However, this problem is more complex because of the overlapping of various rights of access to pasture that are interpreted differently by different tribes, according to their own perception of their traditional land. The problem of access to pasture is further exacerbated by recurrent drought, the lack of secure transhumance corridors and the lack of pastoral infrastructure such as water points.
- Finally, these constraints are also related to issues of taxes collected in livestock market places, to payments for the services of CAHWs, etc.

All these issues, including the diversification of agricultural resources of farmers, pasture access, cattle raiding (which the mission did not have the mandate to explore) etc, are interrelated and solutions require to bring dialogue and support at the level of the Cattle Camps.

It is in these "Cattle Camps" that one needs to establish the necessary dialogue with the Vet services, through the organization of awareness and vaccination campaigns as well as messages such as the self use of drugs by livestock keepers. SPCRP can initiate that programme targeting the cattle camps by supporting the vet coordination units at state level. One phenomenon observed in all the places visited was the marginalization of the role of the CAHW in the cattle camps where livestock keepers feel sufficiently confident to use treat the animals by themselves. There is here a need for more trainings and awareness campaigns tailored to fit livestock keepers' expectations and practices.

Finally, it is at the level of the Cattle Camps and in the Payam (house to house) that women, who play an important role in small livestock production and off-season vegetable growing, can be reached.

3.9 Supervision and regulation capacities of government authorities

A factor likely to strengthen the acceptance of the CAHWs and supervisors to be supported by local authorities is the legitimization of their services.

Proliferation of different actors involved in veterinary drugs supply may be a good thing in preserving competition but a threat to the quality of the delivered services unless key chain actors associated with livestock industry are brought together to ensure their complementarity of their roles. There is a need to clarify the profile of a potential pharmacist, the minimum requirement of drug stores and the conditions of selling. It's only when policy and regulations are clearly set that an awareness campaign and training shall follow. Such training will aim to prevent people from
misusing drugs or selling under dosing drugs and fraction of injection medicines to livestock keepers for example.

SECTION 4: RECOMMENDATIONS

These recommendations are organized around the 4 components that underlie the provision of animal health services to producers. These components are: 1) CAHWs and their organization, 2) the drugs supply system, 3) support to herders in livestock production and 4) policy development.

4.1 The CAHWs and their organization

i) Define the training level and status of supervisors and encourage the government to employ Supervising staff (SP/AHA/Vet coordinators to be enrolled in the payroll system):

Indeed, it is impossible in the short term to train vet doctors to be deployed in the counties, or in the Payams. Some States lack qualified veterinary doctors at the central level. This deficiency has already been identified by SPCRP during their capacity needs assessment and plans already formulated to address the same. However, the most appropriate and sustainable qualification in the medium term at the grassroots level remains the AHA, the SP and vet coordinators. This means that the training of these supervisors at the national level should be standardized, maintained and regularly evaluated. Their recruitment should be legally allowed and provided for in the budgets of the States.

It should be noted that some States already employ supervisors, thus demonstrating that this is possible at this level but budget shortages limit the extension of such initiatives in all the counties and Payams. This is an area that the capacity building component as a whole can look into.

ii) Strengthening Supervisors capacity

For the time being, the SPCRC, through MARF, must strengthen the capacities of the supervisors being trained, those who are already practising and those who are potentially active. This includes provision of refresher courses on common pathologies, less emphasis on Rinderpest that is more or less under control, and more on BPCC, HS, PPR, internal parasites, and "tick-borne diseases". This capacity building will also develop their role in the epidemiological surveillance of diseases. To do this it is necessary to liaise with the LESP project (Livestock Epidemiological Surveillance) of VSF-B so that the same tools are used for monitoring and reporting. MoUs will then be established between SPCRP and VSF-B under the coordination of MARF, so that in the SCPCRP areas, LESP activities can be extended for building the capacities of supervisors and CAHWs.

Strengthening the capacity of supervisors will also require the definition of their mandate, which should contain provision of animal health services in places where there are not enough CAHWs. (The mission met with a number of Supervisors who are also care providers. Authority will then have just to recognise an existing fact).

In the previous projects, supervisors were often equipped with motorcycles or bicycles. Some are still functional, others are not. It is not sure that the FAO (SPCRP) has the necessary budgetary resources to re-equip the supervisors. The program managers shall see to what extent they can provide logistical support, but it is the mandate of the State Ministries, in compliance with the definition of the role of the supervisors, to ensure their mobility.
iii) **Standardise the training curriculum of CAHWs**

The mission was unable to get a reference training manual at the Ministry of Animal Resources. NGOs have made great efforts for coordination, and livestock coordination meetings are planned, even if they are not regularly held. However, it is the mandate of FAO to support the ministry to strengthen its ownership of the training of CAHWs and allow the validation of a clear reference manual to be disseminated widely in the different States and in the various programs.

iv) **Set up an M&E team (or coordination team) and build its capacity at state level**

Led by the Vet coordinator, this team shall be the coordination unit at state level installed by the MARF through the support of SPCRP with the mandate to perform the following actions:

- Organise trainings and refresher course for supervisors and CAHWs in their area of responsibility. The trainings should focus on the outbreak of diseases, on the fundamentals of a disease against which a vaccination campaign is being organised and additional issues of importance to the livestock community.
- Monitor the supervisor's work by producing guidance, clear reporting forms, and objectives.
- Train new CAHWs where a drop out has been observed
- Organise the vaccination campaign. It's a matter of urgency to set a clear and regular vaccination calendar. We noted that livestock owners especially pastoralist are quite concerned about the health of their animals before the beginning of transhumance. Currently, vaccinations are organised when an outbreak occurs. It's important to install routine vaccination against at least CBPP, HS, Black Quarter, at the beginning of the rainy season for example. Whatever calendar agreed with regards to the epidemiology, a priority concern to the M&E team would be the setting-up of a regular and focussed awareness campaign when vaccination period is approaching.
- Coordinate at local level the ongoing surveillance projects and initiate others as per need.
- Organise the major prevention campaign. Thus the tick-borne diseases control programmes should conducted under the responsibility of the M&E team as well as de-worming programmes, nutrition improvement and pastoralist dialogue over grazing field issues.

The SPCRP support to set up such coordination teams within the Animal Resources Directorates would be one of the great achievements.

v) **Support the diversification of the activities of the CAHWs**

Confined to the provision of treatment and mainly the treatment of infectious diseases for a long time, CAHWs need to deploy a wide range of activities including the strengthening of anti-parasite prevention and the control of tick-borne diseases. Both activities are poorly covered because they fall within the sphere of prevention and so require a sustained awareness campaign. The SPCRP can usefully assist in developing both activities. This diversification will be achieved through the establishment of contracts between CAHWs and producer associations or NGOs for the provision of extension services in animal production, the monitoring of groups, and for vaccination.

Finally it is vital that the MARF formalize the epidemiological surveillance work by standardizing the tools, training and paying CAHWs on the basis of a specific contract. This contribution will provide them with the necessary income which is now provided by the NGOs.
Public incentives will form an important aspect of the reporting system because the CAHWs, if they are rigorously considered as private operators only, will have difficulties sustaining their activities once external donor support is withdrawn. (Catley A., Leyland T., Mariner J.C., Akabwai D.M.O, Admassu B, Asfaw W, Bekele G. & Hassan H.Sh. 2004).

Developing this diversification is necessarily linked to the ability of the coordination team at the Animal Resource Directorates to ensure planning, training and policy enforcement. In the meantime, authority should advise or even oblige the operators currently in the field to work with the existing associations.

vi) **Support the strengthening of interest groups and emerging CAHWs groups**

Here, the SPCRP will strengthen the organizational capacity of the existing associations of CAHWs and producers and accompany the initiatives underway. The aim is to give them a stronger voice in the dialogue with the authorities, allow them to defend their interests and plan their actions. It is essential to see the associations as a platform where CAHWs express common interests and as partners of projects and public authorities. Supporting the training of associations only on the running of a pharmacy is simplistic, and the formed associations are currently composed of members whose interests are divergent, thus making the sustainability of these associations structurally challenging.

Support to other groups of producers may also be considered, bearing in mind the desire to have them work with CAHW associations to revitalize the network of all actors working in livestock production in a given area.

### 4.2 Drug supply system

Drugs procurement procedures are set in a way that they are fitting the NGOs set up than market environment (sourcing from Nairobi and Khartoum even now where the two parties of the country enjoy peace). In the sector of drug procurement, the mission recommends the following actions:

i) **SPCR facilitates a high level and inclusive dialogue on streamlining drugs procurement, control and distribution in southern Sudan.**

As the Programme could support such a dialogue, it's a government mandate with the support of the international agencies and private sector to come up with a model of a centralized control of drugs, but not supply system. Such dialogue should be initiated in a workshop bringing together chain actors who are: Department of Veterinary Services, Department of Planning, FAO, NGOs, Private Sector, CAHWS, Pharmaceutical Companies, SPCRP and MDFT covered States, Experts and suppliers representatives from abroad (Kenya, Ethiopia, Uganda, Khartoum).

Setting up a central body eventually by strengthening the veterinary board to licensing professionals and administrate regulations in quality control of drugs and vaccines is considered to be extremely fundamental.

ii) **Support at State level the establishment of intermediary drug suppliers who have high investment capacity**
It is essential for the SPCRP to avoid the creation ex-nihilo of a new drug supply system but to encourage the strengthening of an existing one. (For example, in partnership with the model Projects component and especially under the livestock market development, it will make sense to eventually support a private drug supplying initiative within an animal market). The government shall support intermediate drugs suppliers in facilitating and controlling licences and registration processes as well as implement tax reduction for start up.

Above all, the mission considers the creation and management of a veterinary pharmacy as a business. This means that the operator must not only have an investment capacity but also a genuine desire to make profit, have some knowledge of the market and the environment of drugs supplying business, etc.

It should be conceivable for SPCRP to facilitate the implementation of such private actors at the States where veterinarians, business operators or pharmacists are already selling veterinary medicines. Of these initiatives or associations, the Programme should then support the following:

- Management and accounting
- Training on drugs quality
- Establishing working relations between pharmacists and CAHWs, in particular through the organization of joint training and exchange meetings.

Only trained and qualified personnel will then be allowed in drug business as per the government policy.

It is important to support the establishment of trust and rapport between pharmacies and CAHWs who finally must be considered as privileged customers.

- Link up these structures with micro-credit organizations to finance their stocks etc.

Support in the form of working capital (financial) should be considered on a case by case basis as in general such operators can be funded otherwise (private credit schemes). Anyway the SPCRP support here shall be provided to vet pharmacies against adherence to the CAHWs scheme.

As for the community-based initiatives currently being supported by NGOs, it is reasonable to assist in facilitating the training of managers and facilitating dialogue on the clarification of the roles of the different members. Indeed, despite considerable work conducted by NGOs, these models are very fragile because of the reasons already covered in the preceding sections (composition of members, internal procedures, lack of knowledge in business, motivation etc). Moreover, Aid agencies and NGOs in Sudan carry with them an image of free services and charity that is detrimental to the emergence of a private sector and their sustainability.

iii) Supporting the development of a cold chain system by equipping where necessary pharmacies and vet services with small solar fridges and training technicians for maintenance

The mission reaffirms the government's responsibility for vaccines: from importation, distribution and planning of the vaccination campaigns. The FAO Emergency Program has set up a cold storage in Juba where vaccines are stored. It is envisaged that the government can take ownership of this equipment as soon as possible. At the state and county levels, small kerosene or solar fridges exist in some pharmacies and veterinary
services. Despite limited resources, the FAO emergency program wants to send a number of persons to the Kenya Polytechnic Institute to be trained in cold chain maintenance.

It thus seems reasonable for SPCRP, for the sake of the sharing of expertise and based on its mandate, to focus on the maintenance and provision of fridges at the local level if necessary (at State level and for public and associations run pharmacies). This can be achieved by identifying and training local electronics technicians (transistor radio technician for example) who will be available for the maintenance of refrigerators and cold chains.
4.3 Livestock Production

i) Balance the support between intermediates (CAHWs) and producers in strengthening animal production services at cattle Camp level

To attain this SPCRP should support livestock Departments to develop a livestock extension package and trainings in the provision of rural services.

The mission then recommend to select key pilot cattle camps to concentrate on multi components extension efforts such as:

- Training and awareness rising on tick-borne diseases
- Anti tick prevention campaign at least 2 campaigns per year
- In situ training on the use of acaricides against external parasites
- Construction of vaccination corridors after dialogue with livestock keepers about the place to put such equipments (something that model project can look into)
- Organization of grouped vaccinations campaign for at least CBPP, HS, BQ, regularly, and other diseases if an outbreak arises.
- Install dialogue with the pastoral community concerning their specific problems and raise up complaints to be channelled to the appropriate authorities
- Promote women groups through training in small livestock keeping (sheep, goat and poultry) and diseases prevention. This is not only a way to give the SPCRP a gender dimension but also common sense and an identified need.
- Development of a small scale vegetables growing scheme around the camps where cattle keepers spend at least one agricultural season, by the extension officers from the agricultural component of SPCRP.

Anyway, the SPCRP shall only play a role of logistics and technical facilitator. The livestock coordination unit, under the responsibility of the Vet coordinator, will organize and monitor these activities, in conjunction with the supervisors and CAHWs of the area

4.4 Policy and institutional issues

The recommendations pertaining to policy and institutional issues are beyond the capacity of SPCRP financial capacity and its timeframe. However, the following elements are very central in the dialogue FAO and government authorities are developing as far as capacity building and food security are concerned.

Special emphasis should be put in building capacity at GOSS level to re-establish strong veterinary services and adequate animal production strategies: This will be achieved through a long term strategy in which the key following outcome must be attained:

- The stakeholders concerned should finalise the draft policy on animal health that recognises the significance and roles of CAHWs as an integral part of animal health service delivery strategy.
- A legal framework that defines the roles, responsibilities and accountability of CAHWs and supervisors should be set up.
The policy should provide the support of the community based animal health service including subcontracting CAHWs to deliver services of public good nature.

Finalise research and extension policy through consultative and participatory process (the assumption is that CAHWs will be among the extension service providers).

The mission identified the need of a clear legal framework to set out the relation between CAHWs and supervisors, Vet coordinators and the community. Better yet, the government will be wisely inspired to incorporate in a legal instrument the recognition of the CAHWs and their role in providing public services while developing supporting policies. If needed, authorities will issue an annual licence for CAHWs like in Ghana where such a licence is annually renewable.

The whole drug supplying sector needs a legal framework where the vet services will play the classic role of regulations, licensing and quality control while private sector and strong organised cooperative groups will supply.

i) Supporting the Marial Lou Livestock Training Centre (MLLTC)

According to VSF-B evaluation documents, MLLTC needs huge financial support to rebuild the physical structure. Furthermore, the centre seems to be isolated in an area that is hard to reach during the raining season. An alternative solution mentioned by the VSF-B external evaluation is to reallocate the centre to another location where government can utilise existing buildings.

Training of trainers, certification and validation of training material should then be the core mandate of the MLLTC while continuing training SP, AHA and refresher course for active veterinarians.

ii) Development of Lab diagnostic capacity

There will be no improvement on the surveillance and prevention system without a diagnostic laboratory with basic facilities in Juba. Laboratory building programmes are being supported by different agencies including USAID in Juba.

The laboratories are still in a nascent condition; they have no trained personnel and lack equipment and laboratory reagents to enable them to respond to the disease outbreaks plaguing the region. There is a dire need to equip, train qualified personnel so that the laboratory can be able to respond efficiently and effectively to reported cases from the field.

iii) Vaccines supplying

It is the government's mandate to completely take over the vaccination of animals, to set precise calendar based on the economic and epidemiological importance of the diseases (notifiable diseases). The FAO Emergency Program in Sudan has set up a unit for the storage of vaccines; this unit cannot yet be handed over to the ministry because of the cost of the energy it takes to maintain it. This is an area (energy supply) where the community of donors should help the country to fix it.

The country capacity to secure basic and regular vaccines (CBPP, New Castle etc.), is a key component of veterinary services. However SPCRP mandate is not to provide these vaccines, but rather to set up a system in the frame of the capacity building which will include training for CAHWs, deployment of vaccination awareness within the implementation of the technical package to be deployed in the Cattle Camps.
iv) **Livestock production**

In the long term perspective the government should pay attention in few critical areas as far as livestock production is concerned. Thus the mission recommends to:
v) **Enhance pasture management and animal feeding**

Agricultural pressure on lands is not yet so strong as to affect the pasture potential of Sudan. Today's conflicts appear to be related to different groups coveting the most productive areas where water is available. But there are also complex sociological reasons in the different ethnic groups that create inter-community conflicts. The international community should help the government to design an ambitious hydro-pastoral programme (forage, water catchment areas etc) which would facilitate the opening of new grazing lands.

Livestock farming in south Sudan will remain extensive for a long time (with good reasons). However, the Government should engage in the development of a feeding programme by introducing fodder trees and fodder crop activities targeting livestock keepers who are not engaged in great transhumance. This will help herders to cope with pasture shortage during dry seasons. The use of by-products and techniques like ensilage of sorghum straw will also be of great impact to household raising small ruminant and small cattle herds around residential areas.

vi) **Facilitate the transhumance**

Establishing a tradition of dialogue and sharing of information before major transhumance movements would also help reduce conflicts. Thus, the SIFSIA programme intends to integrate grazing land in their mapping and geographic information systems next year. The Government will find useful information there which the Animal Resources Directorates could use to facilitate dialogue between pastoral and agropastoral communities.

vii) **Coordination of activities and programmes**

There would be more synergy in the livestock sector if the coordination between the main programs in progress were effective. The livestock coordination meetings try to play this role but we think that it could go further. This implies the capacity of MARF to monitor the objectives of the various stakeholders, making them converge towards the macro objectives of the State. These stakeholders are mainly the VSF / EU epidemiological surveillance Project, the FAO Emergency Programs, namely the Vaccine component, the marketing component of the SPCR Model Projects which could target the cattle and meat market, the SIFSIA 'Geographic information system, etc. The MARF needs support in developing its capacity to manage and supervise the technical assistance it receives. Ownership is starting from that capacity.

For quick reference summary of recommendations have been provided in Annex 1 under “what is” and “what ought to be” context.

**SECTION 5: CONCLUSION**

In the short term and medium term horizon CAHWs will continue to play a central role in Southern Sudan animal health system.

The country has one of the largest livestock populations in Africa. However the pathological constraints remain strong in spite of the good results obtained in the fight against Rinderpest. CAHW remains an inescapable actor to reach the maximum of breeders in the current state of nascent veterinary services and human resources capacity. For instance the capacity of training of the veterinary doctors or advanced technicians can be envisaged only in the long term perspectives given the situation in which the country is operating and in view of available institutional and capacity limitations.
However the system of the CAHWs today which is conceived to completely work as a private sector is hardly viable because of the weakness of factors contributing to its maintenance. At first the notion of the payment for the service is rather complex to implement under the prevailing social systems where the local communities, pastoral communities in particular, view such services and social obligations. In such a situation introducing the notion of payment for services for activities considered social is difficult. Contrarily the social relationships and exchanges of services among livestock community members are strong. In the current situation, the CAHW's activity is not economically profitable according to their statements. It is necessary to note also the precariousness of the supply chain of medicines, the weak capacity of supervision and thus the lack of continuous learning.

In addition, it has to be noted that CAHWs programme is coming from the relief background although a trend to development way of intervention is emerging. Payment for livestock services was new to pastoral communities in the context of a relief culture experienced in the region. It is a radical shift from conventional relief thinking to developmental relief.

This predisposes the breeders and the other actors to expect free access to services provided of CAHWs. Consequently many trained workers left this activity for better job in the public or private sector. But the drop out, even at this level, is a risk accepted and noted in other similar programmes. The question is to foster and sustain robust yet simple monitoring system to monitor CAHWs services, identify appropriate training needs so as to keep their motivation and morale high.

The continuing training programme constitutes the price to be paid in the absence of a massive investment to train, employ and equip public veterinarians all over the states. The mission therefore recommends to continuing strengthening the system of CAHW while enlarging the range of their activities. Thus CAHWs shall be entrusted with some missions of public services such as disease surveillance, conducting massive preventive campaigns, etc. in order to deliver some neglected services (prevention) and expand their source of revenue.

It is imperative that a legal framework comes to base this option in particular by directing a part of taxes levied from the cattle markets to finance the animal health subsector. The CAHW would thus be at the end, a private service provider with punctual missions paid by public funds.

The role of the SPRP here will be to support the livestock authorities in managing the factors of success mainly in initiating the recommended actions. The SPCRP will have to show the feasibility of these actions while strengthening the operational capacity of the veterinary services.

A particular attention will then be paid to the emergence of capable Animal Resources Directorates and M&E teams.

Furthermore, the mission suggest diversification of livestock intervention in general and animal health services in particular, to target the livestock keepers themselves, through direct actions at cattle camps level where an impact on animal production is the most probable. The mission believes that the "cattle camp" unit is the appropriate entry point to disseminate technical messages, create community dialogue and in general, to test the foundations of a livestock extension programme.

All this calls for the establishment of an enabling and appropriate policy in which the government will continue to discharge its mandatory role including subsidising or providing some key animal health services (Vaccines, employing supervisors etc).
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### ANNEX 1   Summary of recommendations

<table>
<thead>
<tr>
<th>No</th>
<th>Parameters</th>
<th>Current status</th>
<th>Proposed recommendations</th>
<th>Responsible Party</th>
</tr>
</thead>
</table>
| 1  | Coordination and monitoring Capacity of livestock activities (State level) | Lack of capacity including HR, poor monitoring, lack of equipment, lack of staff motivation | Support creation of a M&E unit within the Animal Resources Directorate at State level, leaded by the vet coordinator or any other degree holder of relevant background<sup>2</sup>  
Monitoring of CAHWs, develop monitoring tools, indicators… | Directorate(s)/SPCRP |
| 2  | Livestock extension activities in cattle Camps | Cattle camp it’s a fundamental unit to be considered in livestock extension, so far there was no direct investment to livestock keepers, efforts so far have been concentrated to CAHWs directly, need to put the herder in the heart of the livestock development Programmes | Awareness raising on tick-borne diseases, produce leaflets and distribute, *Dissemination of awareness materials*, *Anti Tick campaign at least twice a year*, *Training on the use of acaricide to target pastoralist and CAHWs*, *Establishment of vaccination corridors/centres to include: borehole, spray race, loading ramp; to facilitate service delivery in cattle camps or stock migration routes* (SPCRP model project can eventually initiate this construction in one cattle camp)  
Organize grouped vaccinations campaign for at least CBPP, HS, BQ, NCD regularly, and other diseases if an outbreak arise.  
Monitor regular vaccination and deworming campaign  
Develop appropriate communication strategy for extension services for livestock producers  
Organize women groups for training in small | M&E team of Animal Resources D (Supported by SPCRC or a mandated NGO)  
GOSS/Directorate(s) |

<sup>2</sup> Text in italic are the added input coming from the validation workshop
livestock keeping (sheep, goat and poultry) and diseases prevention.

- **Introduction of fodder trees and crops to livestock keepers to improve supplementary feeding of small stock (goats and sheep)**
- Maintain regular meetings between livestock keepers’ community (cattle camp) the M&E team (MARF State level) and SPCR extensionist officers
- Develop a small scale vegetables growing scheme around the camps by the extension officers from the agricultural component of SPCR.

### The supervisors

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>3</td>
<td>The supervisors</td>
</tr>
<tr>
<td></td>
<td><em>Some are enrolled in the States payroll and some by NGOs. Majority of them are volunteers or inactive and largely operating on limited or out of date knowledge.</em></td>
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<tr>
<td></td>
<td><em>The quality of supervision is impacting directly the CAHWs performance and competence</em></td>
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<td></td>
<td><em>Inclusion of the supervisors to the state budget (at least for incentive payment)</em></td>
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<td></td>
<td><em>Provide refresher trainings especially in new and emerging diseases</em></td>
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<tr>
<td></td>
<td><em>Train them in the management of tick-borne disease, emerging diseases…</em></td>
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<tr>
<td></td>
<td><em>Train in report writing (standardised format suggested)</em></td>
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<tr>
<td></td>
<td><em>Training in disease surveillance</em></td>
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<td></td>
<td><em>Support them in planning campaigns and meetings</em></td>
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### The quality and motivation of CAHWs

<table>
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<tr>
<th>Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>4</td>
<td>The quality and motivation of CAHWs</td>
</tr>
<tr>
<td></td>
<td><em>Working as volunteers</em></td>
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<tr>
<td></td>
<td><em>High drop out rate due low or no financial incentives,</em></td>
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<td></td>
<td><em>Activities oriented more to treatments than prevention,</em></td>
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<tr>
<td></td>
<td><em>Suffer from the lack of continual</em></td>
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<tr>
<td></td>
<td><em>Provide refresher courses based on emerging needs.</em></td>
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<tr>
<td></td>
<td><em>Train new CAHWs only where there is a strong community demand</em></td>
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<tr>
<td></td>
<td><em>Diversify CAHWs’ activities to broaden income base, train them in community</em></td>
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MARF
MLLTC
M&E team state level
M&E team of Animal Resources Directorates and SPCRC or mandated NGO
| 5 | Drug supply, the supply chain and non state actors. | • Existing of diversified drug supply channels  
• Huge logistic implication in the budget of the NGO run Pharmacies.  
• Multiple field experiences going on to test the drug supply system. | • SPCRP facilitates a dialogue at high level on centralised control and drug supply system (call for workshop bringing together government, private sector, NGOs, Donors to discuss this issue)  
• Vaccines is mandate of GOSS  
• Develop policies and regulations in quality control of drugs and vaccines  
• Bring chain actors together through a workshop and help them in establishing linkage mechanism.  
• Support the emergence of intermediate drugs suppliers with investment capacity with licenses and registration processes.  
• Provide training in drugs quality, stock management, basic accountancy, business skills targeting drugs store managers (NGO run pharmacies, private ones engaged in the | MARF  
MARF/SPCRP  
MARC  
NGO/MLLT/SCRP |
| 6 | Support to the training system and curriculum development | ▪ Marial Lou seems to be the only viable training centre that has played key role in animal health training  
▪ VSF- Belgium is gradually withdrawing its support to the training centre.  
▪ Physical infrastructure is in dilapidated condition | ▪ Support MLLTC by organizing the training course there.  
▪ *Facilitate the institution to update and standardise training materials and curriculum.*  
▪ Facilitate a workshop to standardise the training curriculum of CAHW’s.  
▪ update the curricula by adding new contents reflecting the current animal health situation: more issues on prevention campaigns  
▪ Hold in MLLTC residential trainings for supervisors particularly in new health issues, refresher course, epidemiological surveillance etc | MARF with the SPCRP or mandated NGO support | MARF, SPCRP, SPCRP/FAO | Support to the training system and curriculum development | ▪ Only trained and qualified personnel allowed in drug business  
▪ *Certification of pharmacies only to those meeting minimum standards (MARF and State responsibility)*  
▪ Link private pharmacies with microfinance institutions  
▪ *Resource permitting equip where necessary public pharmacies at state and county level run by SP/AHA with small solar fridges at critical points needs assessment*  
▪ Train local technicians in fridges maintenance. |  | MARF, MARF, SPCRP, SPCRP/FAO |
<table>
<thead>
<tr>
<th>7</th>
<th>Policy development</th>
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</table>
| Livestock policy is not yet finalised. The mission understood that: The government will withdraw from providing health services, production and processing animal products. Will issue instruments and guidelines to control, regulate animal health and production sectors. Will provide research inputs and training. | - Finalise the draft policy on animal health that recognises the significance and roles of CAHWs as an integral part of animal health service delivery strategy.  
- Provide legal framework that defines the roles, responsibilities and accountability of CAHWs and supervisors.  
- The policy should provide the support of the community based animal health service including subcontracting CAHWs to deliver services of public good nature.  
- Finalise research and extension policy through consultative and participatory process (the assumption is that CAHWs will be among the extension service providers).  
- Develop implementation framework for the policy (Operationalize the policy).  
- Strengthen the linkages among the key players. |
| | MARF to lead SPCR to facilitate  
MARF/States/NGOs/FAO |
## ANNEX 2 Identified training Needs

<table>
<thead>
<tr>
<th>Target</th>
<th>Training objectives</th>
<th>Training Topics (to be adapted)</th>
<th>Responsible</th>
</tr>
</thead>
</table>
| Supervisors | Supervisor should be able to:  
- Monitor CAHWs activities  
- Advise CAHWs  
- Organise cattle camps interventions  
- Organise vaccination campaigns and awareness campaign  
- Organise massive anti tick and deworming programmes  
- Relay epidemiological information  
- To fill in surveillance forms  
- Conduct meetings |  
- Refresher course based on a contextualised curriculum  
- Sudan Emerging infectious diseases (bird flu, PPR, HS)  
- Clinical and post mortem identification of CBPP  
- Internal and external parasites  
- Tick borne disease control (Babesiosis, East African cost Fever, Heartwater, anaplasmosis…)  
- Participatory Planning  
- How to organize a vaccination  
- Epidemiological-surveillance (Protocol, alert etc)  
- Report writing/ Standardized monitoring tool  
- Participatory approach notions | MLLTC/VSF-B |
| CAHWs | CAHW should be able to:  
- Perform a preventive and curative cares  
- Prevent and treat major animal diseases in the community  
- Provide some veterinary and zootechnical simple messages  
- Perform an alert function in case of disease outbreaks:  
  - Recognize the signs to the main suspect contagious diseases  
  - Implement appropriate measures in case of appearance  
- Advise livestock keepers on main health issues  
- Organise collective and participatory community dialogue |  
- Refresher course: review of the whole initial syllabus  
- Emphasis on: CBPP, HS, PPR, FMD, NCD, BQ, trypanosomiasis  
- Organization of a Vaccination campaign:  
  - Calendar (example of CBPP, NCD)  
  - Sensitization activities  
  - Logistic  
  - Reporting  
- Sensitization campaign on ticks  
  - Frequency of treatments  
  - Dosage and use of acaricide  
  - Safety in use and disposal of acaricide  
- How to organize community meetings and relay extension messages  
- Disease surveillance protocol (role of CAHW): identification, alert, report, immediate actions, advises to livestock  
- Village Poultry production: housing, nutrition, | M&E team supported by an NGO per state. |
| Pharmacists/drug store managers from associations, NGO run stores, private sector, unions etc | Pharmacy manager should be able to:  
- Advise correctly CAHWs and livestock keepers  
- Maintain a high standard store environment  
- Manage stock of drugs and vaccines  
- Calculate cost for each new acquired product  
- Keep accurate records | NCD vaccination, other disease with economic importance  
- Basic cash and stock management | MLLTC/VSF-B |
| Livestock keepers (cattle camps) | Organise themselves prevention campaigns before transhumance  
- Properly dose acaricide and oral anti-helminthiasis  
- Take appropriate measures in case of an outbreak | Importance of regular parasites control  
- Use of acaricide for ecto parasite and tick control  
- Safety in use and disposal of acaricide  
- Notion of resistance (under dosing drugs and related risks, counterfeit drugs and risks etc)  
- Endoparasitism and prophylactic measures  
- Importance of Regular vaccinations  
- The role of the livestock keeper in surveillance  
- What to do in case of a disease outbreak (example of CBPP, HS, NCD, suspected bird flue)  
- Improved animal husbandry practices | M&E/SPCRP support |
| Women groups | Women group members should be able to:  
- Run improved small ruminants and small scale poultry units | Village Poultry production: housing, nutrition, NCD vaccination, other poultry health diseases  
- Small ruminant husbandry  
- health issues (emphasis on PPR) | M&E/SPCRP support |
| Electronic technicians | In each location where there is a refrigerator for vaccine, a technician shall be trained in its maintenance. | Solar fridge maintenance  
- Kerosene fridge maintenance | SPCRP support |
# ANNEX 3 Tasks to be performed within the SPCRP timeframe

<table>
<thead>
<tr>
<th>SPCRP Responsibility</th>
<th>LF Ref</th>
<th>Logical Framework</th>
<th>Recommendation</th>
<th>Activity</th>
<th>Collaboration</th>
</tr>
</thead>
</table>
| 2.8 Upgrade the level of existing CAHWs | Support creation of a M&E unit within the Animal Resources Directorate | - Identify in each State and form the M&E team  
- Identify the vet coordinator (lead and focal person)  
- Define and formalise the role of M&E team  
- Develop operation plans for M&E  
- Develop tools and indicators to monitor livestock activities and CAHW's  
- M&E to develop livestock extension package for pastoralists  
- M&E to train and supervise CAHWs (issue 2.10 of the logframe) | NGO/CBOs |
| 2.9 Developing new CAHWs | Only where there is a strong community demand 'demand based extension' | - Needs assessment  
- Organise Community dialogue  
- Link up any new CAHW's with an existing drug supply system or new project (LESP, model projects, etc) including microfinance institutions.  
- Provide initial training (Refer Training needs matrix) | NGO per identified area  
MLLTC |
| 2.10 Training CAHWs | Provide Supervisors with up to date knowledge  
Diversify CAHWs’ activities | - Training supervisors (Refer Training needs matrix)  
- Identify **one Cattle camp per State** for initiating a livestock extension package including  
  - Awareness raising on tick-borne diseases, (production of simple leaflets).  
  - Dissemination of awareness raising materials  
  - Anti Tick campaign at least twice a year  
  - Training on the use of acaricide and awareness on the dangers of self use of antibiotic and sophisticated drugs. Targeting | MLLTC or NGO  
M&E supported by NGO |
|   | Institutionalize CAHWs | Supporting the existing and emerging CAHW's and Pastoralist Associations | Facilitate development of the existing and emerging CAHW's and Pastoralist associations.  
Facilitate Drafting constitutions and legalisation of the association  
Provide training on good governance, business and management skills etc.  
Facilitate linkage with veterinary services, NGOs and other local authorities  
Organise a workshop on drugs supply  
Facilitate the revival of the Veterinary board  
Link up with FAO Emergency to identify number and locations where fridges should be provided  
See training needs matrix  
Link up with FAO emergency that has similar objectives on maintaining cold chain.  
SPCRP will facilitate (consultancy and working sessions etc) |
|---|---------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.11 | SPCRP | Resource permitting equip where necessary public pharmacies at state and county level run by SP/AHA with small solar fridges at critical points needs assessment  
Provide training in drugs quality, stock management, basic accountancy, business skills targeting drugs store managers  
Training in fridge maintenance  
Provide legal framework that defines the roles, responsibilities and accountability of CAHWs and supervisors |  |
<table>
<thead>
<tr>
<th>LF Ref</th>
<th>Logical Framework</th>
<th>Recommendations related to the SCR LF</th>
<th>Activity</th>
<th>Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8</td>
<td>Upgrade the level of existing CAHWs</td>
<td>- Support creation of a M&amp;E unit within the Animal Resources Directorate at State level,</td>
<td>- MARF to facilitate and if needed give instruction to local authorities to provide the necessary human resources</td>
<td>FAO and Donors</td>
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<tr>
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<td>- Inclusion of the supervisors to the state budget (at least for incentive payment)</td>
<td>- Initiate dialogue between juba level and state level and take a harmonised and standardised action</td>
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<td></td>
<td>- Finalise the draft policy on animal health that recognises the significance and roles of CAHWs as an integral part of animal health service delivery strategy.</td>
<td>- Meetings, consultancy, workshops and seek FAO support</td>
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<td>- The policy should provide the support of the community based animal health service including subcontracting CAHWs to deliver services of public good nature.</td>
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<td>- Finalise research and extension policy through consultative and participatory process (the assumption is that CAHWs will be among the extension service providers).</td>
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<td>- Develop implementation framework for the policy (Operationalize the policy).</td>
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<td>- Strengthen the linkages among the key players.</td>
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<tr>
<td>2.9</td>
<td>Developing new CAHWs</td>
<td>Only where there is a strong community demand 'demand based extension)</td>
<td>Develop and Implement animal health policy and extension policy.</td>
<td>FAO support</td>
</tr>
<tr>
<td>2.10</td>
<td>Training CAHWs</td>
<td>Facilitate MLLTC to update and standardise training materials and curriculum.</td>
<td>Finalise Research policy</td>
<td>VSF B support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revitalise the MLLTC</td>
<td>The institution should led a large consultancy among actors to update and validate curriculum and training material</td>
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</table>

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<table>
<thead>
<tr>
<th>GTZ-Model Projects</th>
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<tbody>
<tr>
<td><strong>2.9</strong> Developing new CAHWs in collaboration with model projects</td>
</tr>
<tr>
<td><strong>Recommendations related to the SCRP LogFrame</strong></td>
</tr>
<tr>
<td>Recommendations related to Trainings, livestock infrastructures and capacity building.</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
</tr>
<tr>
<td>Collaboration in business skills development Common training on management of slaughter houses and places with AHA, Vet and CAHWs Collaboration in the establishment of key livestock infrastructures such as vaccination corridors (in concrete material), holding ground, loading ramps, etc</td>
</tr>
<tr>
<td><strong>Collaboration</strong></td>
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<tr>
<td>FAO support</td>
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</tbody>
</table>
ANNEX 4 Evaluation Form

CAHW Impact Evaluation Form

CAHW name:___________________________________________
State:_________________________________________________
County:______________________________________________
Payam:______________________________________________
CAHW’s experience (years)__________

Apparent technical competence

Guiding questions and issues to be raised

- common diseases treated
- Explore technical practices used as per his/her training
- Direct observation of his/her equipment
- Record of success on treatment or diagnosis
- Frequency of intervention.
- Recognised constraints

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<td>Very Poor (1)</td>
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<tr>
<td>Poor to average (2)</td>
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<tr>
<td>Good (3)</td>
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<tr>
<td>Very good (4)</td>
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Geographical and socio-ethnical coverage

Guiding questions and issues to be raised

- Where are your clients coming from?
- Is it the same location where the CAHW is living?
- List 5 most visited area?
- How far is the most distant of your clients?
- Is there an ethnic bias?
- Gender preference?
- Any constraint on reaching more clients?

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</table>
Extent of activities and provided services

Guiding questions and issues to be raised

- Attended species: evaluate the most attended species
- The unit size of the regular clients
- Livestock model of the client.
- Are you usually called for an identified disease?
- Have you to diagnostic the disease or confirming it
- Are you called to just provide advice?
- Do you think being considered as a vet “expert” or a medicines supplier?
- Are you doing:
  - Deworming practices: frequency? (think about seasonal frequency a preventive measure)
  - Spraying?
  - Injection?
  - Tablets using treatment?
  - Advice on nutrition?
  - Castration?
  - Participation to an official health information system?
  - Participation to a vaccination campaign?

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</tbody>
</table>

Community support

Guiding questions and issues to be raised

- How have you been elected to be CAHW within your community?
- Are you maintaining any other relation between you and the community?
- Do you feel supported by:
  - the community elders?
  - Vet services and livestock officers?
  - NGO and other organisation technicians?
  - Livestock breeders? which ones (identify any bias related to the size livestock unit, systems, gender species kept etc)

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Motivation and Profitability

- Are you considering your activity as economically essential?
- If possible try to estimate the part of this activity in the CAHW income’s and welfare
- How are you charging service provided?
- Who fixed the level of fees or its structure?
- The consultant will establish a list of common services and the applied rate per service and specie in a simple tabular form
- Are you receiving alternative remuneration (in kind, gifts etc)
- Did the CAHW work change your social position within the community? Your relation with authorities?

The interviewer and the CAHW will establish a consensual and basic annual generated income sheet. (Investment out of the initial kit compare to monetary remuneration including immunization campaigns if organised)

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General Impact Grading of the CAHW

<table>
<thead>
<tr>
<th>TOTAL SCORE (5 to 20)</th>
<th>GRADING (5 to 10= Poor, 11 to 20 = Good)</th>
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Additional notes and anecdotes

Comment on his/her self-confidence on delivering vet services
Any major success
Comment or anecdote which led you to award the above score