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Issue Brief

Burkina Faso small ruminants value chain business case

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Revised Burkina Faso Small Ruminant Value Chains business case

Background

This document provides the rationale and evidence of the appropriateness of the choice of the Burkina Faso small ruminant value chain as a priority target value chain and the role L&F research could contribute for pro-poor transformation of the target value chains. Comments on the first draft of the business case have been taken into account in this updated version.

Why the small ruminant value chains development in Burkina Faso

Along with crop farming, livestock play an important role in alleviating the problem of food insecurity among the vast majority of rural households as source of animal source protein (milk and meat), cash to buy grains and insurance against crop failure. Livestock occupy an important place in the national economy of Burkina Faso because of its contribution to GDP which is 19% (Kabore et al., 2011). After mining and cotton sectors, livestock exports constitute the third source of revenue for the state economy.

Burkina Faso is home of 21.2 million sheep and goats that contribute to meeting the national demand of meat and other livestock products such as milk and skins. Total meat supply from all species was estimated at 171,578 tons out of which 37% and 30% were from cattle and small ruminants, respectively. In 2005, about 1.1 million sheep were slaughtered. Also in 2005, about 3.1 million goats have been marketed and slaughtered, more than twice the number of sheep, to contribute to meeting domestic demand for meat. There has been a trend of a steady annual increase in the number of sheep (2.8%) and goat (4.1%) slaughtered between 1996 and 2005 for domestic meat consumption reflecting dynamic livestock value chains driven by both a high population growth rate (2.7%), rapid urbanisation and increased income associated with the average GDP growth rate of 5.5% enjoyed by Burkina Faso over the last decade (10.5% in 2012).

In addition to supplying domestic demand for meat, small ruminants are also raised for export to coastal countries mainly Ivory Coast, Ghana and Benin. Exportation to coastal countries is mainly in the form of live animals and skins. In 2005, about 304,000 sheep and 350,000 goats were exported to neighbouring countries. Burkina Faso is the main supplier of *Tabaski* rams to Ghana and Ivory Coast. Both domestic and export demands of these animals are increasing. However, most of export value of small ruminants' products is generated from skins.

There are potentials for the small ruminant value chains in Burkina Faso to play a greater role in improving income, food and nutrition security of poor farmers, especially women if important productivity gaps are addressed with significant improvements in animal health, feed, breeding and management inputs and adequate pro-poor institutional and policy support.

Model projections (IEPC, 2006) predict that by 2016 there may be serious decreases in the capacity of Burkina to meet its national demand of livestock products and therefore a decline in livestock exports if significant improvements are not brought about in livestock production systems. Without improvement, it is predicted that there would be deficits of 1.4 to 1.8 kg/habitant/year in the supply of sheep and goat meat. Even with improvements, the gap in sheep and goat supply will be significant (1.1 to 1.6

kg/habitant/year, IEPC, 2006). It is expected that L&F will play a significant role to support necessary improvements and transformations in small ruminant production systems.

Burkina Faso is endowed with attributes that justify its selection for pilot testing the development of small ruminant value chains as a means through which poor smallholder farmers can improve their incomes, livelihoods and consumption of animal source foods. Indeed, Burkina Faso (BF) presents a diversity of agro-ecological zones (arid, semi-arid and sub-humid zones) thus presenting different production systems, in which small ruminants are not only important, but where the breed/population differences, resource endowments, husbandry practices can be differentially and profitably exploited. Lessons learnt from the targeted small ruminant value chains (SRVC) in BF would be easily out-scalable in many other sub-Saharan countries with similar biophysical and economic conditions.

Production and supply constraints

Small ruminant production in Burkina Faso is predominantly extensive in nature. Pastoral system is the dominant livestock production system in the Sahelian zone while extensive sedentary systems are dominant in the Sudanian and Sudano-Guinean zones (Kabore et al., 2011). Semi-intensive and intensive systems are mainly found in the peri-urban areas. At least 80% of rural population raise goat and sheep, in low-input systems with heavy dependence on natural pastures and crop residues for feed. The small ruminant breeds are also distributed along the agro-ecological zones.

Prominent constraints to smallholder farmers keeping sheep and goats in these production systems include seasonal fluctuation in feed quantity and quality, shortage in water supply and exposure to various risks notably drought and animal diseases which translate into poor livestock productivity and disincentives for further investment in livestock production. The scarcity of naturally occurring feed resources has led to increased prices of crop residues and by-products in such a way these feeds resources are no longer accessible to small smallholder sheep and goat keepers. The increase in the availability of quality biomass should be a priority research intervention area.

Diseases such as Pasteurellosis, Peste Petits Ruminants (PPR), trypanosomiasis in the Sudano-Guinean zone, and gastrointestinal parasites are combining with seasonal feed deficit to cause high pre-weaning mortality of up to 30%, and overall low flock productivity. Other critical production constraints include lack of access to inputs and credit, difficult access to animal health services, and high transaction costs in livestock trade (Kabore et al, 2011 and Williams et al., 2011). Despite significant advances in the effective control of animal diseases over the last 15-20 years, poor public and private animal health services is jeopardizing past gains in effective control of animal diseases. For instance only 0.08% of small ruminant are vaccinated now against Pasteurellosis.

Table 1 summarises the rationale for the selection of Burkina Faso to pilot the pro poor transformation of the small ruminant value chains.

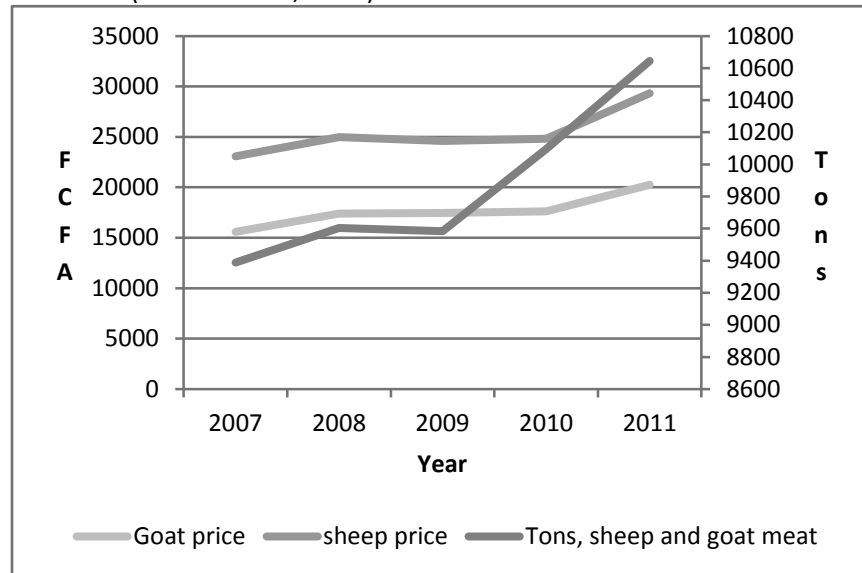
Table 1. Criteria and rationale for Burkina Faso

Criteria	Rationale for Burkina Faso
Growth and market opportunity	There is increasing demand for goat and sheep meat due to increased income and population growth both in BF and countries importing live animals from Burkina Faso. Figure 1 indicates trends in sheep and goat prices and meat production. The growth rates in sheep and goat production is estimated at 3% per year between

2006 and 2011. Sheep and goat prices have increased faster during the same period (5% for sheep and 10% for goats).

Only 13% of the value of sheep and 9% of the value of goat productions from Burkina are exported to neighbouring countries that reflect the prominence of the national market and therefore its strategic priority for the development of SRVC in BF. However, BF is the major supplier of live sheep and goats to Ghana and Ivory Coast and there is a trend of both increasing domestic and export demands of these animals. Also, recently, there is increasing number of live animals from Burkina Faso being exported to Nigeria through Niger. Steady growth in demand of goat and sheep meat in neighbouring countries will be beneficial to Burkinabe poor farmers keeping small ruminants because of changes in improved management practices they bring about.

Figure 1. Sheep and goat prices and meat production in Burkina between 2007 and 2011 (Source: MRA, 2011)



Skins are certainly the livestock commodity of highest value exported from Burkina as its share to total value of livestock commodities from BF is estimated at 51%. However, the total volume of sheep and goat skins exported from BF declined from 1383 tons in 2007 to only 368 tons in 2011 which may reflect higher local demand of sheep and goat skins and more locally based value addition from small ruminant products in BF.

Pro-poor potential

Small ruminants are the agricultural commodity of choice if jobs in rural areas, income, food security and consumption of animal source foods are to be improved in rural areas in BF. Almost 92% of the 16.9 million people in BF derive their livelihoods from the agricultural sector. Sheep and goats are key household assets with income generation, food supply, saving and insurance functions. They play crucial risk mitigation role in the face of drought, crop failures, and illness and to (re)invest in crop production following drought or other hazards. BF is home to 21.2 million sheep and goats belonging to 5.3 millions of poor farmers who

	<p>depend on their livestock assets to secure their livelihoods. It is expected that the transformation of the sheep and goat value chains in BF with increased sheep and goat production and productivity will translate into both enhanced cash income and consumption of animal source food in the form of meat and milk for the benefits of poor farmers.</p> <p>Sheep and goats assets are key opportunities for smallholder small ruminant producers, especially women and youth to engage in income generating activities. The demand for labour of livestock associated activities in agro-pastoral systems of Burkina Faso is estimated at 900,000 full time, year-round workers, out of which 65% are engaged in small ruminants production activities and 93% of them are from family members. Another key feature of labour use in agro-pastoral systems in Burkina is that 67% of labour requirements for small ruminants are provided by youth. Furthermore, about 30,000 people secure full employment as actors along the livestock value chains and small ruminant value chains offer an opportunity for employment for 49% of this workforce (IEPC, 2006). As a major supplier of labour, it hypothesized that the intensification of small ruminant production will ultimately translate into improved labour productivity and income for the benefits poor sheep and goat keepers and poor actors of these value chains.</p>
<p>Food and nutrition security</p>	<p>Burkina Faso is prone to recurrent droughts and therefore food insecurity and malnutrition rates are high as the vast majority of the population derive their livelihoods from agriculture. In 2012, it was estimated about 1.7 million people in Burkina Faso were at risk of food insecurity and unable to meet their food needs beyond three months after harvest in 2013 (WFP, 2013). The global acute malnutrition rate and levels of stunting among children under 5 years old remains above the 'serious' thresholds (WFP, 2013). There is also a huge gap in consumption of animal source food between city dwellers and farmers in Burkina Faso. Per capita meat consumption is estimated at 20.2kg/habitant/year in cities and at 9.1 kg/habitant/year in rural areas. The contribution of sheep and goat meat in total meat consumption in rural areas is estimated at 35%. Keeping small ruminant is a unique opportunity for poor farmers to consume meat, a commodity that would have been unaffordable if they had to buy it. A significant proportion of the 30% total offtake in sheep and goats are in the form of slaughter for domestic consumption. It is estimated that more than 2/3 of sheep and goats that are slaughtered in Burkina are uncontrolled and are main sources of meat for ceremonies and festivals which are rare opportunities for many poor farmers to eat meat though with the least health standards. Goat milk has a significant role in the supply of livestock farmers with animal source protein, energy and other key nutrients. City dwellers in Burkina consume 23kg of milk/habitant/year while the annual consumption of milk is estimated at 15 kg/habitant/year in rural areas. Goats are the main supplier of milk for home consumption (32% of total milk consumption in pastoral areas). About 31% of total milk production in Burkina is supplied by goats in these areas</p>
<p>Researchable supply constraints</p>	<p>Significant productivity gaps in sheep and goats due to differences in management have been reported in agro-pastoral systems in Mali similar to those found in Burkina Faso (Wilson 1986). Using mortality rates, parturition intervals and dam</p>

	<p>post-partum weight, Wilson (1986) estimated that female goats reared under good feeding systems produced each year 17.1 kg of live weight of weaned kids as compared to 12.1 kg in millet system characterized by poor feeding systems and health conditions. Similarly, ewes produced 24.7 and 32.1 kg of live weight of kids per year in millet and rice systems, respectively. The ratio of the productivity in best over that of worst flocks was 1.73 in the rice systems and 1.55 in the millet system. It is therefore apparent that significant productivity gains of more than 50% could be achieved under this program if improved management (better nutrition and health care) are promoted and adopted by small ruminant producers.</p> <p>Strategies to improve sheep and goat feeding systems in Burkina Faso will rely on (1) producing more feed of better quality , (2) making best use of existing feed resources and (3) the promotion of transfer of feed resources from areas of feed surplus to places experiencing feed deficit. Food-feed crops such as cowpea and groundnut already play a critical role in the supply of high quality feed to small ruminants. This Program will endeavour to identify superior cultivars of food-feed crops (cowpea, groundnut) and promote their widespread dissemination though appropriate seed production and distribution mechanisms.</p> <p>A large sheep and goat breed diversity exist in BF today. Sahelian breed of goat and sheep is found in the Sahelian zone which is a large frame while trypanotolerant Djallonke goat and sheep breed is found in the Sudano-Guinean zone in the south of the country where trypanosomiasis is prevalent. Mossi breed of goat and sheep, and the crossbred between Mossi and Djallonke sheep are found mainly in the central part of the country (the Sudanian zone). These animal genetic resources are well adapted to the specific agro-ecological conditions (heat, vector-borne diseases, seasonality in feed and water supplies) and production systems (mobility). They provide a good fit to the needs of diverse production systems and market demands in Burkina Faso and in the subregion. The challenge is to analyse past formal institutional sheep breeding programs to better understand causes of failures and success, to characterise sheep production systems including farmers breeding systems with the view to designing and testing best-bet sheep genetic improvement strategies and interventions including both straight breeding and cross-breeding schemes.</p> <p>Filling the productivity gap will also rely heavily on the design/adaptation of health and management interventions that reduce high pre-weaning mortalities and abortion rates in ewes and to better control killer and debilitating diseases such as PPR, Pasteurellosis and parasitic and zoonotic diseases. The establishment of efficient pro-poor animal health delivery systems will be key to improved sheep and goat productivity.</p>
<p>Enabling environment</p>	<p>The National Plan for Investment in Agriculture (NPIA) under the CAADP/NEPAD framework puts emphasis on increasing the productivity of livestock commodities</p>

	<p>including small ruminants. This program has also the objective to improve the natural resource base, better management of water resources for both irrigation and livestock needs and institutional capacity building which will benefit the SRVC. The Government of BF has a national policy for the sustainable development of livestock sector between 2010 and 2025. This policy has investment plan for development of livestock sector for the period 2010 – 2015.</p> <p>Burkina Faso is part of the livestock market information systems set up by USAID as part of the Famine Early Warning Systems for the Sahelian countries.</p> <p>Engagement with development partners such Heifer International, UNECA, USAID, FAO, will likely enable this Program to influence major livestock development programs and to leverage significant development funds and contribute to taking programme outputs at scale.</p>
Existing momentum	<p>There is a considerable body of research work that have been carried out in BF in the past by ILRI and a number of research partners. These include the recent Feed Investment Study in WA (WB, ILRI), crop-livestock intensification projects (SLP on crop residues, AUSAID/CORAF project; IFAD/IDRC project on Intensification of integrated crop-livestock systems in the dry savannas of West Africa); CFC Trans-regional livestock trade in West Africa, etc.). Lessons learnt from these past experiences will be brought to bear using the integrated value chain approach of L&F Programme.</p> <p>Many CRPs (Dryland Systems; CCAFS; Water, Land and Ecosystems; Forest, Trees and Agroforestry; Dryland Cereals and Grain Legumes) have sites in Burkina Faso which provide opportunities for Livestock and Fish to build synergies with other CRPs through co-location and joint staffing to address issues of common interest where possible. For instance, feed resources and feeding strategies are areas of common interest to Dry Lands, Humid Tropics and Livestock and Fish programs that could constitute a ground for concrete linkages and creation of synergies.</p> <p>ILRI has established recently a new national office and its regional office in BF with the prospect of engaging with many research and development partners that have vested interest in the development small ruminant value chains and other livestock development issues and who are prepared to engage in complementary investments. In this regard, ILRI will be carrying out consultations with research (INERA) and development partners (USAID, SNV, CILSS, AUSAID) with track records in livestock development, to build the required partnership for the implementation of the SRVC programme in BF.</p>

Research, supporting actions and partnership

Table 4.11 summarises key development challenges and proposed research and support interventions on which the Burkina Faso small ruminant value chain will focus. At the production node, the small ruminant value chains in Burkina Faso will look at alternative solutions to bridge the gaps in small

ruminant productivity based on existing and program generated new knowledge that inform the design of feeding, breeding and health care innovations addressing biophysical constraints related to high mortality rates, seasonal feed shortages. Research and supportive interventions aimed at improving sheep and goat feeding systems will focus the optimization of the use of available feed resources through smart association of cereal and legume and cereal crop residues. An inclusive process of participatory development of breeding and sustainable management strategies building on existing systems and on farmers experiences in Burkina Faso will be developed during the course of this Program.



Besides technology enhancing interventions detailed above, efforts will be made to improve access to effective and better quality inputs and services, and output markets by farmers with the view to promoting uptake of sheep and goats productivity-enhancing technological innovations. In that regard, efforts will be made to adapt business development services models and innovation platforms to small ruminant value chains for mutual learning and co-development of value chain upgrading innovations building on existing opportunities and common value chain actors common concerns and issues.


For all these research efforts to bring about expected research and development outcomes, it will be crucial to establish and maintain a solid partnership with a number of key players at various scales including: (1) partner research organisations at the national (INERA, Universities), regional (CORAF) and international (CIRAD) levels; (2) development partners including the Ministry of Animal Resources (MRA), large development projects, donors (USAID), NGOs (SNV, Heifer), (3) organisations of value chain agents that will be mapped (APESS) and (4) the private sector (feed factories, service providers).


Gender dimension

Women are key actors in sheep and goat production. Most of small ruminant assets are owned and managed by women. Therefore, the mainstreaming of gender into the Burkina Faso SRVC project is seen as a crucial strategy to ensure sustainable and significant impact on key intermediate development indicators notably improved nutrition and income of women and young children. The analysis of specific constraints and needs of women and children, the main source of workforce allocated to sheep and goat production, will be key to the design of strategies that would empower women and youth and to ensure they will have easier access to financial and support services required for the uptake of productivity enhancing technologies and an equitable share of gains generated along the SRVCs in Burkina. The active participation of women in innovation platforms/business hubs which will be established in program action sites, the strengthening of their technical, organisational (women marketing associations) and institutional capacities are some of the strategies enabling the mainstreaming of gender in the SRVCs project in Burkina and more equitable and gender sensitive distribution of value chains generated benefits.

Table 3. Opportunities and constraints in sheep and goat value chain in Burkina Faso and the research and development actions to overcome them.

Value chain components	Developmental challenge	Researchable Issues and Supporting Actions	Indicative partners	Outcomes
 <p>Inputs & Services</p>	<p><i>List key developmental challenges</i></p> <ul style="list-style-type: none"> How to design and establish a model of sustainable delivery of input and services provision for sheep and goats keepers with special emphasis to women small ruminant producers . 	<p><i>Researchable Issues</i></p> <ul style="list-style-type: none"> Ways to strengthen public and private veterinary input and services delivery systems. Ways to improve feed supply systems, the delivery of improved breeding stocks, and fodder seed production and distribution systems. Challenges in existing formal and informal credit systems for actors (producers, traders, service providers) in the SRVCs <p><i>Supporting Actions</i></p> <ul style="list-style-type: none"> Establish and operate sheep and goat business development services at the action sites Promote the establishment of, and strengthen technical, institutional and financial capacities of local public and private veterinary service providers to ensure delivery of better quality services Facilitate access to credit by small ruminants producers, providers of input and support services and strengthen their organisational and institutional capacities Promote businesses oriented feed processing and trade enterprises 	<p><i>Research</i></p> <ul style="list-style-type: none"> INERA, Universities, CIRDES <p><i>Supporting Actions</i></p> <p>On-going Livestock development projects Private feed factories</p>	<ul style="list-style-type: none"> The number of sheep and goat farmers that have access to veterinary services (vaccine, drugs) has increased and therefore more sheep and goat are vaccinated and treated each year More farmers have better access to and are using fodder seeds. Input and service providers that are relevant to sheep and goat producers have improved their knowledge, skills, and financial capacities and have upgraded their businesses Small entrepreneurs processing and selling livestock feed have been set up
 <p>Production</p>	<p><i>List key developmental challenges</i></p> <ul style="list-style-type: none"> How to increase production, productivity and value of sheep and goats produced by poor farmers for both home consumption and sales through the smart combination of productivity enhancing 	<p><i>Researchable Issues</i></p> <ul style="list-style-type: none"> Review causes of death and conduct complementary epidemiological studies in order to design strategies to reduce mortality rates in young animals and high abortion rates in ewes Develop more effective PPR vaccines (Thermostable PPR vaccine). 	<p><i>Research</i></p> <ul style="list-style-type: none"> INERA, CIRDES, Universities, CIRAD 	<ul style="list-style-type: none"> Sheep and goat flock sizes have increased as a result of reduced death rates and this has translated into increased offtake rates and income for farmers

	<p>technologies- : 1. better health care to reduce mortality rates, 2. improved feeding strategies and 3. better access to breeding stock of superior genetic merit.</p> <ul style="list-style-type: none"> • • 	<ul style="list-style-type: none"> ▪ Assessment of forage resources and feed markets for matching feed resources with sheep and goat requirements to identify deficit and options to meet the shortfall in intensifying crop-livestock systems ▪ Screening, breeding and dissemination of high yielding food-feed crops (dual purpose cowpea, groundnut) ▪ Test innovative technologies to make better use of crop residues (Production of roughage based compact feed blocks with the incorporation of other nutrients,) ▪ Review sheep breeding programmes, determine breeding goals and objectives, design and test best-bet sheep genetic improvement strategies and interventions including both straight breeding and cross-breeding schemes. <p><i>Supporting Actions</i></p> <ul style="list-style-type: none"> ▪ Develop community based strategies to improve management of natural resource (water, land, vegetation) and Develop an information system on feed and water availability across the year based on assessment ... ▪ Support the development of local institutional and organisational capacities through producers and women associations and collective action sheep and goat marketing and acquisition of inputs and services. ▪ Facilitate the establishment of business development services for improved access to knowledge services, physical inputs and credit. 	<p><i>Supporting Actions</i></p> <ul style="list-style-type: none"> ▪ 	<ul style="list-style-type: none"> ▪ Improved breeding males and females are more readily available to poor farmers ▪ The number of rams fattened each year has increased significantly. ▪ Sheep and goat productivity rates have increased as a result of improved weight gains in sheep and goats due to adoption of fodder crop innovations.
 <p>Transport & Processing</p>	<p><i>List key developmental challenges</i></p> <ul style="list-style-type: none"> ▪ How to reduce transport and handling costs in national and cross-border small ruminant trade • 	<p><i>Researchable Issues</i></p> <ul style="list-style-type: none"> ▪ Analyse sheep and goat marketing channels for the formulation of recommendations to reduce transport and handling costs. <p><i>Supporting Actions</i></p> <ul style="list-style-type: none"> ▪ Develop and maintain road infrastructures ▪ Support availability of multifunctional trucks and influence changes in truck and spare part import taxes ▪ Support the application of ECOWAS policies on regional trade 	<p><i>Research</i></p> <p><i>Supporting Actions</i></p> <ul style="list-style-type: none"> ▪ CILSS, USAID, ▪ Livestock Traders 	<p>Income of farmers and traders has improved as a result of reduction in sheep and goat transport cost.</p>

		which eliminates illicit taxes	Associations at the national and regional levels	
	<p><i>List key developmental challenges</i></p> <ul style="list-style-type: none"> ▪ How to reduce marketing transaction costs and imperfections in order to improve the efficiency of sheep and goat marketing systems. ▪ How to ensure that gains along the sheep and goat value chains are equitably distributed to all actors. ▪ How to promote the participation of women in the marketing of sheep and goats ▪ How to promote exports of Burkina Fasoan sheep and goats into northern neighbouring and Arabic countries 	<p><i>Researchable Issues</i></p> <ul style="list-style-type: none"> ▪ Analyse sheep and goats marketing systems (Describe markets size, functions, structures, infrastructures, and financial and social capital endowments; analyse capacity, strengths and weaknesses of market agents, their functions, describe market information systems; and identify the institutional constraints that hinder sheep and goat market efficiency) ▪ Capture lessons learned from collective marketing experiences and facilitate the establishment of sustainable sheep and goat marketing associations <p><i>Supporting Actions</i></p> <ul style="list-style-type: none"> ▪ A livestock marketing information system is put in place and is operational. ▪ Promote mechanism to improve access to credit by livestock traders ▪ Upgrade national and regional market infrastructures. ▪ Organise regional small ruminants fairs to promote sellers and buyers from different countries 	<p><i>Research</i> INERA</p> <p><i>Supporting Actions</i></p> <ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> ▪ Information on livestock markets (prices, opportunities, constraints) easily available to all actors of the value chains ▪ Increase in the volume and value of sheep and goats traded at the national and regional levels • ▪ Increase in the profit margins made by sheep and goat farmers engaged in breeding, growing out and fattening operations • ▪ Income of actors along the SRVC have increased
<p>Crosscutting issues</p>	<p><i>List key developmental challenges</i></p> <ul style="list-style-type: none"> ▪ How to create incentives for increased investment in sheep and goat production, marketing and processing systems through reforms in national and regional policy and institutional frameworks. • ▪ How to disseminate lessons learnt and knowledge and information among various partners 	<p><i>Researchable Issues</i></p> <ul style="list-style-type: none"> ▪ What are the necessary reforms in institutional frameworks to promote strong, efficient and sustainable small ruminant farmers/traders associations ▪ Influence of tariff and non-tariff barriers to small ruminant intra-regional trade <p><i>Supporting Actions</i></p> <ul style="list-style-type: none"> ▪ Support establishment and/or strengthen capacities of existing small ruminants producers and traders associations ▪ Establish information and knowledge exchange networks 	<p><i>Research</i></p> <p><i>Supporting Actions</i></p> <ul style="list-style-type: none"> ▪ 	

Geographical focus

Burkina Faso can be divided into 3 agro-ecological zones: (1) the Sahelian zone between isohyets of 400 and 600 mm. This zone represents 10% of the country's land area; (2) the Sudanian zone is the central part of the country with the isohyets between 600 and 1000 mm. This zone forms the most significant part of the country land area, about 79% and (3) the Sudano-Guinean zone between isohyets 1000 and 1400 mm and forming 11% of the country land mass. Goat and sheep production systems with highest potential for intensification and highest impact to poverty will be targeted. To that end, a targeting process for the SRVC in BF has been initiated in late 2013. Two main criteria were used notably poverty and small ruminant density. Two different poverty criteria were used: (1) density of poor people living below the poverty line (\$1.25/day) and (2) proportion of the population that is living below the poverty line (\$1.25/day). The thresholds used for each criterion were agreed upon by stakeholders that participated in the Burkina Faso small ruminant value chain development inception workshop.

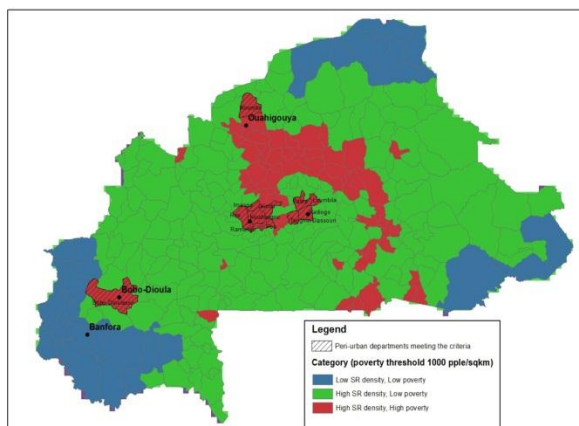
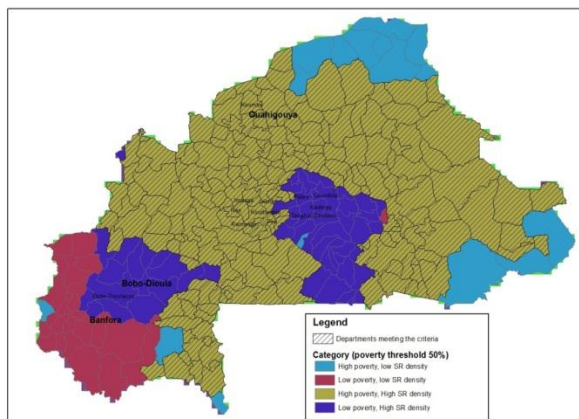


Figure 2. Overlay of small ruminant density and poverty (% living below poverty line)

Figure 3. Overlay of small ruminant density and poverty (density of poor people)

The first step consisted of selecting departments in rural-to-rural sheep and goat supply chains (R-R) and rural to urban (R-U). Using small ruminant density and percentage of people that live below \$1.25, a spatial overlay was carried out with the following thresholds: small ruminants' density above 20 per square kilometre and 50 percent of people living below the

poverty line. Figure 2 shows 8 departments that were pre-selected (Dori, Nouna, Ouahigouya, Kaya, Fada N'gourma).

The second step consisted of selecting departments that fall under the category of urban to urban (U2U) production systems using small ruminant density with a threshold of 20 small ruminants, and the density of people living below \$1.25 per day (threshold of 1,000) people. Four (4) peri-urban departments were selected from this overlay (Figure 3). Four departments were pre-selected including Pouytenga and Bobo Dioulasso. Next planned steps in final site selection include the use soft criteria (e.g. presence of other CRPs, donor interest, existence of historical data) to streamline preselected sites in a participatory manner with the involvement of national experts in Burkina Faso. In addition a ground-truthing exercise will take place with the collection of more detailed production systems, market access, district and household statistics, institutions using a checklist which will be developed.

Potential for impact

It is assumed that if 5% of the population of sheep and goats are kept under improved management systems as farmers make use of productivity enhancing-packages (improved health interventions, good housing and strategic supplementation), meat from these animals will increase by 5,000 tonnes each year in Burkina Faso. It is also hypothesized that with the increment in sheep and goat production, about 150,000 households keeping these animals are expected to benefit from both increased income and improved diet and health through increased consumption of safer sheep and goat meat. Furthermore, it is expected that the upward shift in feed supply, veterinary inputs, transport and processing of sheep and goats will create new opportunities for more jobs for actors along the value chains.

The development of SRVC in BF Burkina will require (1) considerable public and private investments to support access to inputs and output markets, (2) more technical, organisational and institutional capacities of value chain actors, and (3) the creation of an enabling environment with adequate pro-poor policies to ensure that the programme outputs are translated into research and development outcomes and impacts for the benefit of the poor. One of the pillars of the program's approach to impact pathway is the development of firm partnerships with public and private development organizations with clear identification of the roles and responsibilities of each partner. The co-development of new technologies, new institutional arrangements and policy measures to support the value chains in the program action sites seem to be an effective avenue to ensure the programme outputs are used beyond the programme site boundaries to reach a larger number of poor smallholder sheep and goat producers. Elaborated value chain theory of change and impact pathway will be developed in 2014.

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