

Burkina Faso small ruminants value chains impact pathways narrative

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November 2014

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Small ruminants value chains problem context¹

Livestock contributes about 19% of Burkina Faso's GDP with a significant proportion of this contribution coming from small ruminants (sheep and goats). Burkina Faso has an estimated 21.2 million heads of sheep and goats providing 30% of the country's meat and mutton supplies. Small ruminants are commonly produced under low-input use production systems (mainly the extensive grazing) that are characterized by a myriad of productivity challenges. It is predicted that close to 80% of small ruminants are reared under such systems. Consequently, it is estimated that in the coming 10 years the Burkina Faso will be facing an average deficit of 1.6 kg/habitat/year of mutton and goat meat. The most pressing challenges causing low productivity are grouped under five major categories include poor animal health due to common diseases and inadequate feeds and feeding practices. Others include low animal genetic composition, general lack of organizational institutions to strengthen value chain actor's coordination and access to services and the widespread destruction of natural resources due to the use of poor practices.

Notable diseases leading to low productivity in the value chain include Pasteurellosis, Peste Pestits Ruminants (PPR), trypanosomiasis and diseases caused by gastrointestinal parasites. Unfortunately, smallholder producers lack adequate access to public and private animal health services to prevent and control these diseases. As low as 0.1% of small ruminants in Burkina Faso are vaccinated against Pasteurellosis. In addition, smallholders rely on extremely poor feeding systems characterized by frequent seasonal feed deficits, both in quality and quantity. Feed deficiencies along with diseases have often associated with considerable pre-weaning mortalities, estimated at 30%, and high abortion rates among small ruminants. Inadequate supply of feeds is linked to land scarcity and the rapid destruction of communal pastures whereas poor quality of feeds is a result limited access to high quality grass and legume species. Available grass species are found to be fast lignifying and decaying grass species. Good species are increasingly being invaded by less palatable species. Moreover, farmers lack adequate access to affordable and high quality local-ingredient based feeds. Feed scarcity is also linked with a poorly regulated and inefficient animal feeds processing and distribution sector. Besides the poor feeds, lack of a sustainable access to quality water has constrained small ruminant production yet its development has received little attention. A few poorly designed water management strategies and water harvesting innovations have been tried out to increase farmers' access to natural water resources. An additional technical challenge for smallholder producers in Burkina Faso and affecting productivity is the low animal genetic potential of available small ruminant breeds. A large number of animals is composed of the unimproved indigenous breeds and is supported by a deficient national genetic improvement strategy. Besides, the smallholders lack the technical skills to improve the genetic potential of existing breeds.

¹ Reference: CGIAR Research Program on Livestock and Fish. 2014. Burkina Faso small ruminants value chain business case. Prepared for the Livestock and Fish 9th Program Planning and Management Committee Meeting, WorldFish Penang, Malaysia, 3-4 April 2014. Nairobi, Kenya: ILRI.

The Burkina Faso livestock development policy environment has a weak focus on developing the small ruminants production. The stuck absence of appropriate value chains stakeholder platforms or actors-bonding mechanisms, to link value chain actors and improve their coordination, is a clear reflection of the unfavorable livestock development environment. Where these stakeholder platforms are innovatively developed, they provide the mechanisms for identifying, diagnosing and tackling typical value chain bottlenecks and exploit existing opportunities to improve overall value chain performance. However, as a result of their absence, value chain actor groups are isolated and unable to effectively influence policy actions that eventually affect smallholders' access to inputs and services. At the producer level, farmers are also extremely isolated. There is minimal collective action and their bargaining power, along the value chains, is significantly diminished. Consequently, farmers are unable to reap good shares of the benefits accruing from their participation in these value chains.

The last challenge for the small ruminants' value chains is associated with the widespread mismanagement of natural resources and the environment, through unsustainable practices such as overgrazing, unregulated mining and natural resource use activities. The unregulated mining and farming practices leave grazing lands, agricultural lands and natural resources deteriorated. Specifically, these activities have impacted the greatest effect on communal grazing lands. On the other hand, the lack of communally tailored pasture management institutions and arrangements and the expansion of cropping lands are also blamed for the increasing disappearance of communal grazing and pasture lands.

Vision and long term goals

The Livestock and Fish CRP's vision for the Burkina Faso's small ruminants value chains is: "By 2023, low income women and men in Burkina Faso are able to produce and consume more and safer meat and milk from more inclusive, productive and sustainable small ruminants value chains."

In the interim the program activities will work towards achieving increased smallholders' access to input and output services to enhance the productivity of small ruminants. It is also anticipated that the increased access to input and output services will translate into higher volumes of quality small ruminant products (meat and milk) reaching the markets. And the resultant increase in supply of quality meat, mutton and milk will contribute to more household consumption of these products and to improved household nutrition and health status. Also smallholders, through their improved access to marketing services, will make informed marketing decisions, improve their bargaining power and realize bigger market margins. Earning of favorable and competitive shares of the market margins, along these value chains, will improve household income from small ruminants and lead to diversification of household diets and improved nutrition status. These outcomes in these value chains will be delivered through five (5) overarching impact pathways, namely:

1. Strategies for developing and delivering improved animal health innovations.
2. Options for developing and delivering animal feeds and nutrition innovations.
3. Strategies for developing and delivering small ruminant breeds and genetics innovations.
4. Innovative land use and environment smart interventions.
5. Policy, markets and institutional options for value chain development.

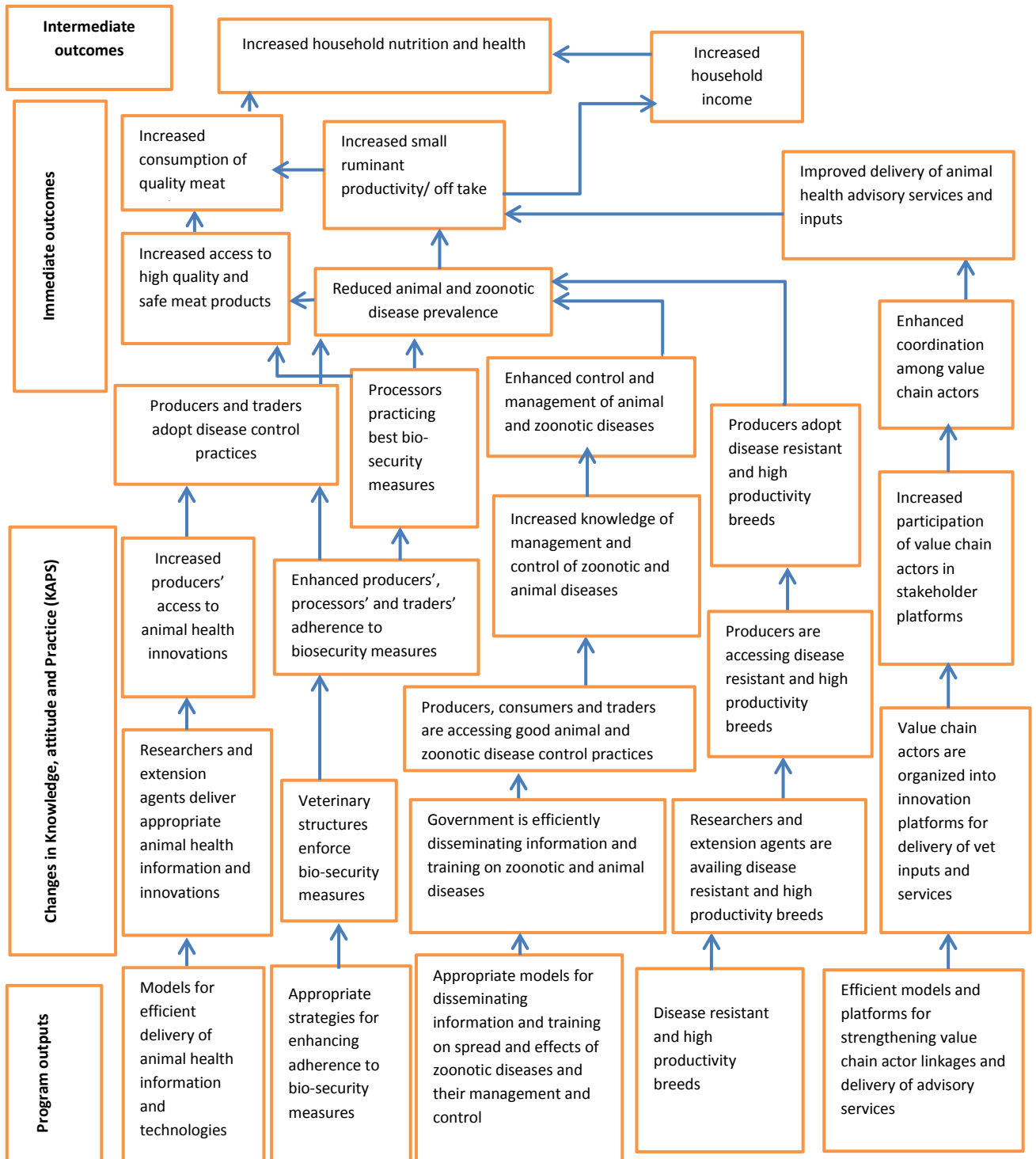
Impact pathway 1: Strategies for developing and delivering improved animal health innovations

Poor management of small ruminant diseases and the inadequate access to animal health services and inputs are important challenges for improving small ruminant productivity in Burkina Faso.

Pasteurellosis, Petits Ruminants (PPR) and trypanosomiasis prevalence, especially in the Sudano Guinea Zone, are the three most important diseases that need targeted interventions, yet little focus has been placed on them. The malfunctioning public and private animal health service sectors are responsible for most flock mortalities and morbidities in these value chains. Impact pathway 1 (Figure 1) focuses on developing and delivering efficient innovations that will lead to increased small ruminants productivity and increased supply of high quality meat and mutton products.

Improved productivity through appropriate animal health innovations will happen through farmers' improved access to animal health inputs and services, farmers' use of disease resistant and high productivity breeds being combined with the use of recommended practices to manage animal and zoonotic diseases. First, by developing sustainable value chain actor platforms to build and enhance linkages among stakeholders, the program will improve coordination among value chain actors to influence animal health services and inputs delivery and foster co-learning among them. Improved productivity will also be achieved when researchers and extension agents efficiently develop and delivering breeds with high disease resistance potential. The additional route for reducing the prevalence of animal and zoonotic diseases will involve ensuring that value chains actors, at the various nodes of the value chains, adequately access and use appropriate disease prevention and control practices e.g. strict adherence to recommended biosecurity measures and use of slaughter houses that fall recommended biosecurity standards. To achieve great effectiveness, biosecurity measures will be combined with improving value chain actors' knowledge and skills on small ruminant diseases and their associated zoonotic diseases. Specific program outputs/ strategies for this portion of the pathway will emphasize development of efficient models for delivering animal health information, skills and technologies, appropriate strategies for enhancing adherence to biosecurity measures and training on management of animal and zoonotic diseases.

Figure 1: Innovations for developing and delivering improved animal health innovations pathway

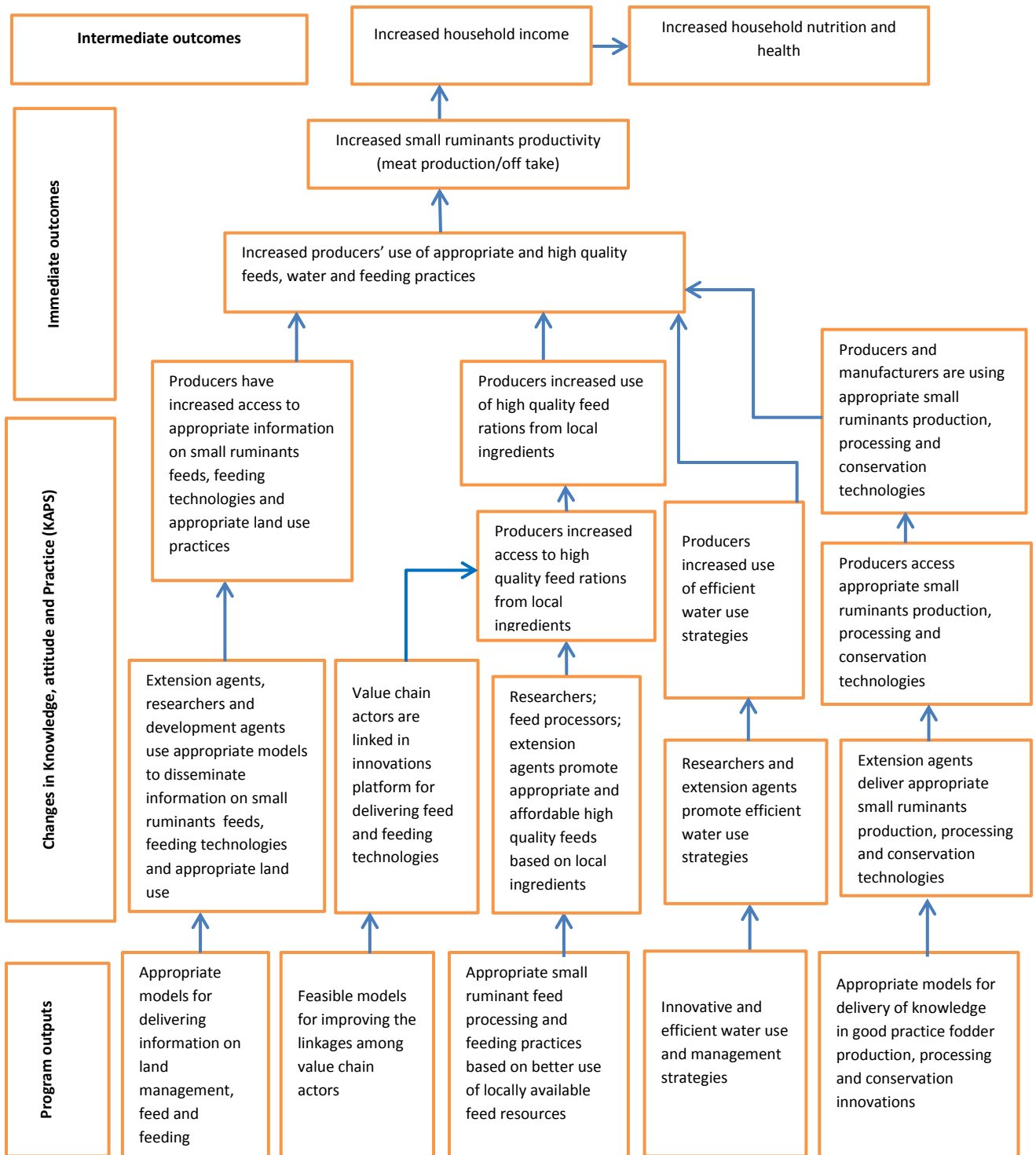


Impact pathway 2: Options for developing and delivering animal feeds and nutrition innovations

The absence of locally-based small ruminants feed resources including crop residues and by-products has been associated with high cost of feeds. This impact pathway (Figure 2) involves improving small ruminants' productivity through innovative options aimed to improve production, delivery of animal feeds and feeding technologies. Six key routes are envisaged, namely: through innovative models for delivering information on sustainable land use, efficient feed and feeding technologies including feed rations and feeding strategies, models for strengthening linkages among value chain actors, derived from locally available resources, strategies for improving the use of natural water resources and innovative strategies for producing and conserving fodder.

Once the most appropriate land use strategies, feeds and feeding strategies are identified, developed and delivered to smallholders, and extension agents' capacity built, smallholder producers will use them to improve small ruminants productivity. Increased use of better feeds will result from farmers being able to access affordable feeds processed from locally available resources. It is assumed that these innovative feed technologies will provide farmers with better access to comparably cheaper feed resources. Similarly, small ruminants' access to water resources has often been under prioritized in livestock development. The inadequate and seasonal fluctuations in access to water resources in Burkina Faso, due to inappropriate water management and harvesting systems, have been key players in the low small ruminant productivity. Working closely with the CRP on Water, Land and Ecosystems (MLE), the program will design and deliver efficient and sustainable water use strategies. The second area of intervention in this area will focus on improving farmers' knowledge and practices in fodder production and conservation. This will be combined with building efficient partnerships to deliver high quality fodder seeds through the promotion of fodder seed systems.

Figure 2: Options for developing and delivering animal feeds and feeding innovations impact pathway

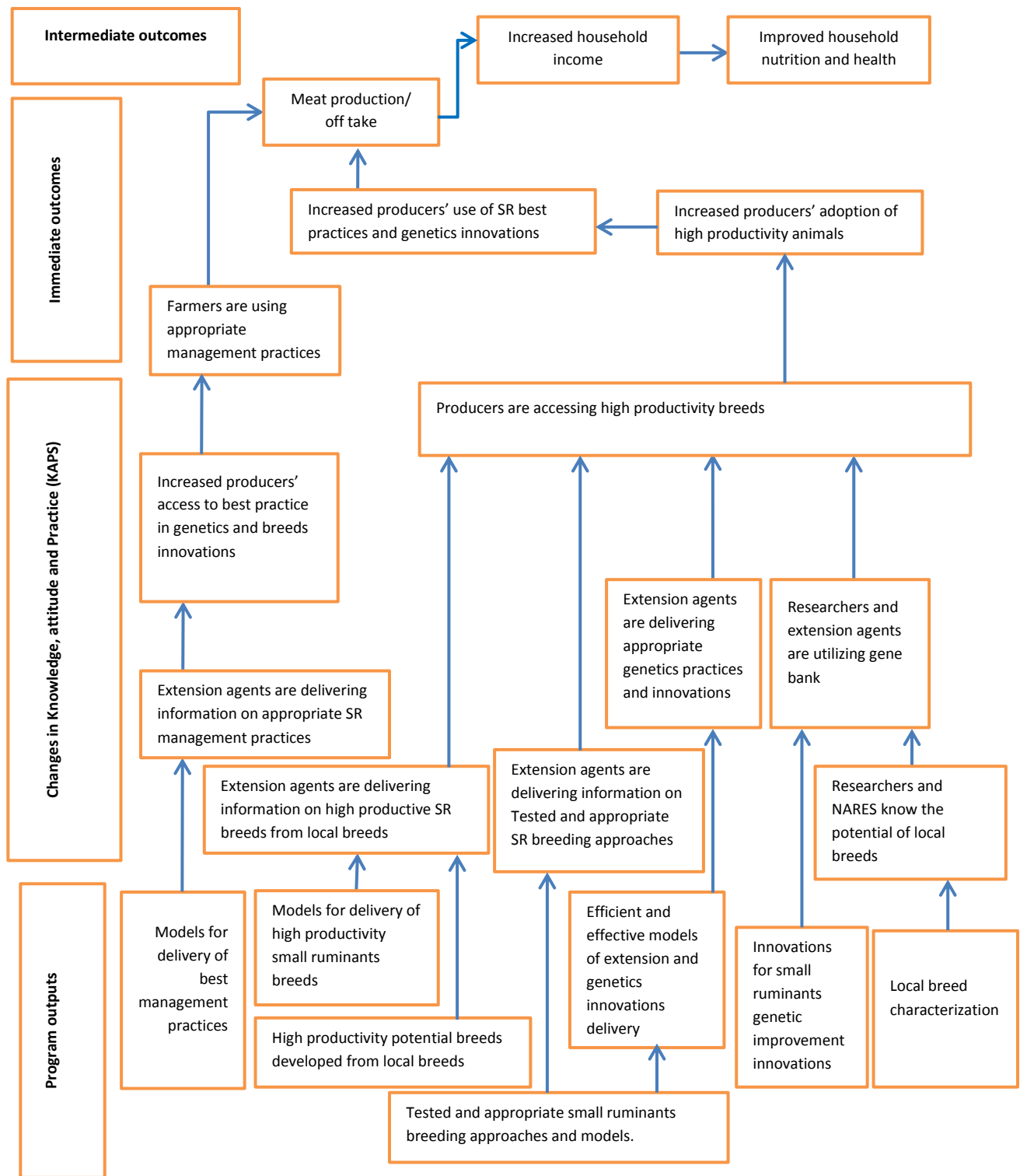


Impact pathway 3: Strategies for developing and delivering small ruminant breeds and genetics innovations

Despite Burkina Faso having a wide range of agro ecological- and production system-adapted sheep and goat breeds, a large number of smallholder farmers continue to face the scarcity of high productivity breeds. The most pressing challenge in this regard has been failure to learn from previous efforts aimed to improve productivity through breeding. This impact pathway (Figure 3) is centered on developing, delivering and promoting the use of appropriate small ruminant breeds and genetics materials to improve small ruminants productivity. It should be noted that this strategy will need a more integrated approach to deliver productivity gains. Therefore, the first route will focus on integrating genetic improvement with increased access to recommended small ruminants' management practices.

The second route for achieving increased productivity through genetics will involve developing local breeds with high productivity and adaptability potential. Burkina Faso has numerous local breeds adaptable to a wide range of conditions across the country. The Sahelian goat and sheep found in the Sahelian zone, the trypanotolerant Djallonke goat and sheep found in the Sudano-Guinean zone-a trypanosomiasis prevalent zone, the Mossi goat and sheep, and the cross between Mossi and Djallonke sheep mainly found in the central part of the country (the Sudanian zone), are examples of locally adapted breeds that could be the basis for this program's breed improvement strategies. An additional entry point for the program in this area will include improvement in the delivery of information on these local breeds and other promising breeds from neighbouring countries. A key starting point will be the characterization of existing breeds. In the long term, however, the program's pipeline portfolio will stretch to delivering appropriate breeds that match domestic and export market demands and the evolving production systems. Once smallholders have increased access to breeding information training and affordable superior breeding materials, they will realize improved animal productivity, improved household incomes, better nutrition and improved health statuses.

Figure 3: Strategies for developing and delivering small ruminant breeds and genetics innovations impact pathway.

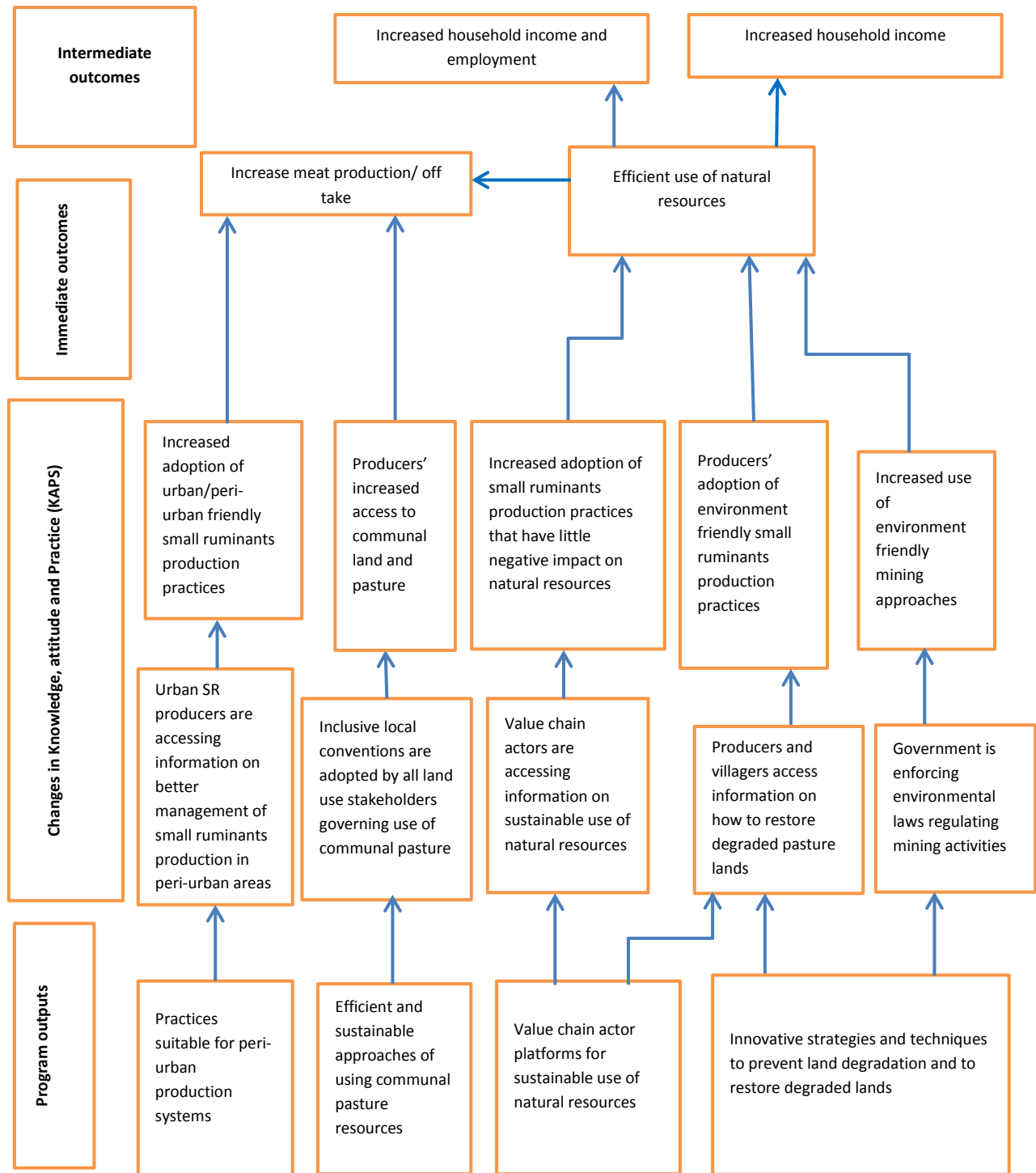


Impact pathway 4: Innovative land use and environment smart interventions

The poorly regulated human activities in livestock production and, to a smaller extent, the artisan mining activities have had a significant negative impact on the status of natural resources in Burkina Faso. These negative impacts are in turn affecting small ruminants productivity by constraining farmers' access to feed resources. Land scarcity and existing ambiguous land ownership rights have exacerbated the competition for traditionally available communal grazing lands among animal grazers and resulted in overgrazing and accelerated loss of biodiversity. Similarly, widespread use of non-conventional mining activities has contributed to the accelerated deterioration of natural resources, particularly of livestock grazing lands and natural water resources. This impact pathway (Figure 4) traces out the program's strategy for delivering better and sustainable land use options and environment smart approaches to for a sustainable development of the Burkina Faso small ruminants value chains. Two major routes are envisaged, namely: 1) increasing productivity of small ruminants through adoption of urban/peri-urban appropriate production systems and producers increased access and use of communal land and pastures, and 2) efficient use of natural resources through the use of small ruminant practices that have minimal negative impacts on natural resources.

The program's direct influence on the first route will include a focus on identifying appropriate practices suitable for peri-urban production systems. The program will also focus on community based resource management strategies to stimulate efficient and sustainable use of communal pastures resources. These might include facilitating the development of communal land use and management institutions to guide and regulate the use of natural resources. In the second route, livestock and fish research program will focus on: 1) enhancing delivery of information and building value chain stakeholders' platforms to focus on sustainable use of natural resources and grazing lands and 2) designing innovative strategies and techniques to prevent land degradation and to restore degraded lands.

Figure 4: Innovative land use and environment smart interventions impact pathway



Impact pathway 5: Policy, markets and institution for improved value chain performance

The Burkina Faso small ruminants' value chains face several market imperfections including high marketing costs and market infrastructure associated inadequacies. These challenges are directly linked with inappropriate adherence to marketing regulations, lack of strong linkages among value chain actors and inappropriate models for transporting and delivering live animals, meat and mutton products to the market. Others include low domestic value chain addition leading to low profits accruing to actors' participation in the value chains and the absence of appropriate mechanisms for improving smallholders' participation in livestock markets. This impact pathway (Figure 5) focuses on strategies for improving the environment (in terms of enabling policy and, favorable markets and institutions) in which most value chain actors operate to ultimately improve the overall system performance. Four principal channels are envisaged, namely: increased producers' access to and use of quality inputs and services, increased farmers' use of appropriate practices through improving delivery of innovations and information, increased use of best practice meat and mutton transportation methods, delivery and promotion of affordable and profitable value addition technologies and mechanisms to ensure that market participants, at all value chain nodes, reap favorable profit margins from participating in the value chains.

Many of the strategies identified for this impact pathway are also important in other pathways focusing on delivery of technical outputs. To increase producer's access to high quality inputs the program focus on building the capacity of government/regulatory bodies to enforce and enhance adherence to input quality maintenance. Similarly, the program will develop and test innovative organizational models to strengthen actors' coordination in the efficient and sustainable delivery of inputs and services. To increase value chain actors' share of the profit margins, the program will facilitate the development of appropriate models for transporting and delivering live animals, meat, mutton and milk products and adding value to these products. And once these small ruminants products are efficiently delivered to consumers, producers will reap favorable shares of the markets benefits and consumers will improve their access to affordable meat, mutton and milk products and improve their nutrition and health status. Finally, low participation of smallholders in livestock markets is important challenge for improving performance of these value chains. To improve their participation in livestock markets the program will promote appropriate business models by identifying and working closely with partners who have the capacity and skills in business development.

Figure 5: Policy, markets and institution for improved value chain performance impact pathway

