

Workshop

“Sustainable Livestock Production in the Tropics”



December 2007

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1 Introduction

Be-troplive (www.be-troplive.be) is an informal and multidisciplinary platform, which started in 2006 and is open to institutional or individual members involved in tropical animal health and production activities. Members are: 1° Belgian academic institutions and research institutes, 2° Belgian development organisations, NGO's and consultancy companies, 3° Belgian government and parastatal services involved in development in general, and tropical animal health and production in particular, and 4° Individuals involved in tropical animal health and production activities, including alumni of postgraduate courses of Belgian universities or academic institutions, active in a Belgian framework of activities.

The objectives of be-troplive are:

- to create a network of Belgian institutions and individuals involved in activities related to tropical animal health and production in order to exchange information on ongoing research, training and development projects
- to stimulate joint actions in order to attain synergy in the field
- to increase the national, European and international visibility of the Belgian expertise in tropical animal health and production
- to improve the coherence of the Belgian Co-operation, in the field of tropical animal health and production
- to improve the relations with the agricultural and the medical sector in order to enhance the efficacy of animal health and production activities

In order to achieve part of those objectives, be-troplive decided to organise a workshop in November 2007 with as main purposes to 1° identify and conceptualise the new challenges of livestock production, and 2° to identify new strategic tools to make livestock production sustainable in the tropics. This was aimed in line with the tendencies in international development cooperation, especially with those of the Belgian Development Cooperation.

The programme and the venue of the workshop can be found in annex 1 and the list of the 79 participants in annex 2.

2 Rationale of the workshop

The livestock sector as well as the agriculture in general is undergoing far-reaching changes. External factors, like demographic growth, increased urbanisation, and income-driven increased demand for animal products are inducing these changes.

Indeed, populations are growing and cities boost, causing changes in food demand. This is remarkably more pronounced in the South where the livestock production and consumption increase, while it stagnates in the North. These evolutions result in the livestock sector facing new challenges related to a large set of factors. Among these we can list: land use and related land degradation problems, climate changes, emerging competition with food and bio-fuel for grains, political instability, threats to biodiversity, increasing concentrations of animals in – and around cities, scale-up of units in size, access to market, ... As livestock-related activities contribute to the ecological footprint, climate change, air and water pollution, the sector also has to face a certain form of reluctance from decision-makers, even if it largely contributes to food security.

On the other hand livestock remain vulnerable to several diseases, e.g. trypanosomiasis, contagious bovine pleuro-pneumonia, ... Globalisation induces import of new diseases in countries that are not yet able to identify and control the spread of those pathogens. Zoonotic diseases are also of increasing importance, not only emerging diseases like avian influenza, but also a lot of neglected 'traditional' zoonoses, e.g. brucellosis, tuberculosis and cysticercosis. Animal disease control and veterinary public health are therefore of increasing importance.

Provocatively, one could say that livestock has to be banned of the food strategies as those challenges are too important. This is neglecting the fact that the livestock sector accounts for 40 percent of the agricultural gross domestic product and employs 1.3 billion people in the world. Moreover, livestock is a key asset for poor households providing livelihoods for more than one billion people.

New innovative strategies are necessary to alleviate the human, technical and socio-economical constraints faced by the sector, e.g. capacity development, access to credit, quality control, market organisation, and policies to address the impact of livestock on the environment. Investing in animal health and production research is necessary to contribute to the development of the new tools. More globally, those strategies have to fit with the achievement of the Millennium development goals and the Declaration of Paris on aid efficiency.

However, different agro-ecological systems need different strategies. Therefore, the workshop has been organised around three areas: arid zones, humid agricultural zones, and urban areas.

Defining those new challenges can help donors and research institutes refining their strategies. Hopefully, the output of this first Belgian global workshop on this topic can be the start of a long-term reflexion.

3 Course of the event

The Workshop was moderated by Guy Hendricks, a veterinarian who is head of Avia-Gis, a company specialised in geographic information system applications in the field of livestock, and who has a long experience as FAO expert in Africa. Besides the Belgian expert members of be-troplive, representatives of the European Commission, of the Belgian Development Co-operation (DGDC), of the Belgian Technical Co-operation (BTC) and from African and European Universities were also attending. Students from the Master course in Tropical Animal Health (Institute of Tropical Medicine Antwerp) and students from the joint Master "Management of Vegetable and Animal Resources in Tropical Areas" (Gembloux Agricultural University and the Faculty of Veterinary Medicine of the University of Liège) were also present. In total, twenty-three nationalities were represented allowing a multidisciplinary and multinational approach.

Pierre Dorny (Chairman be-troplive) welcomed the participants. The rationale of the workshop (see annexes) was introduced by the moderator. He stressed that livestock is part of food security but that the livestock sector as well as agriculture in general are undergoing far-reaching changes. New innovative strategies are necessary but different agro-ecological systems need different ones. The workshop was therefore organised around three areas: arid zones, humid agricultural zones, and urban areas.

The first part of the day included four keynote presentations. Patrick Simons (DGDC) gave an overview of the current strategy of the Belgian Co-operation in the livestock sector, part of a broader rural development and food security strategic plan. Sofie Van Waeyenberge (BTC) highlighted the new trends in aid to the agricultural sector showing that many things are changing. Agriculture in general is put again at the centre of the development agenda. However, the focus on "production" moves to a focus on "market demand" and income generation, and from primary production to value chain. Public-private partnerships are of importance and a broader policy context (including factors of globalization) has to be considered instead of a narrow focus on agriculture. Furthermore, we should move from service delivery to strengthening institutions and different actors. Jakob Zinsstag (Swiss Tropical Institute, Basel, Switzerland) made a presentation on "Current challenges to tropical animal health: The potential of "one medicine-one health". He highlighted the most important threats in the field of animal health; he emphasized the link with human health due to the presence of zoonoses and showed the added value of a one health approach. Due to globalization, tropical animal health also has to move to a more global animal health approach. Finally, Chedli Kayouli (INAT, Tunis, Tunisia) focused on the current challenges in tropical animal production regarding not only the technical aspects (availability of land and water, competition with crops, transformation of closed to open systems ...), but also the human aspects (weak capacities...) and the implications of oil reserves decline and high oil prices.

The afternoon was devoted to groups work organised around arid zones, humid agricultural zones, and urban areas. The conclusions of each group were presented during a plenary session and a general discussion was lead by the moderator. A more detailed report will circulate among the participants and will be made available on the website as soon as possible.

Eric Thys (Secretary of be-troplive) presented the realisations and the perspectives of be-troplive after two years of activities (see annex). The results of the elections for the new Steering Committee were announced. A vote of thank was given to the Members leaving the Steering Committee as founding members of the Platform. An important point for the future is that the link of the Platform with alumni networks will be strengthened. The crucial importance of bringing the expertise of universities and research institutes, implementing agencies and private companies together was put forward as a valuable asset of the be-troplive initiative.

In his closing speech as Chairman, Pierre Dorny thanked all the participants and the Federal Public Service of Foreign Affairs, Foreign Trade and Development Cooperation for making the conference room and the facilities of the Egmont Palace available for the event. The workshop was concluded by a reception in the tapestry hall of the Palace.

The different presentations can be found on the website of be-troplive (www.be-troplive.be).

4 Results of the groupwork

4.1 Arid zones

The key question was whether or not nomadic and transhumant systems should be promoted. The group concluded that herd or flock mobility in arid settings is the best way to guarantee the preservation and the valorisation of the environment. Indeed, past initiatives to promote settlement of the nomadic groups had a very negative impact on the ecology of the zone. Supporting the traditional livestock systems while adapting them to the new economical and ecological challenges sounds to be the most effective.

The group identified following requirements to attain this objective:

- Improved access to services and education for livestock keepers
- implementation of technical training and valorisation of traditional knowledge at all levels (to safeguard traditional knowledge)
- better quantification of the economical potential of those systems
- development of sound commercial chains with an adequate control system
- organisation of livestock keepers and strengthening of the livestock keepers groups
- Improvement of conflict management through increased dialogue among the actors. Pacification of those areas is a fundamental requirement to guarantee the viability of the system. Competition between the different production systems must also be better managed
- implementation of a multidisciplinary approach
- development of innovative approaches helping to reach the pastoralists despite their mobility
- guaranteeing herd mobility
- advocating for the economical importance of livestock production activities and taking livestock production into account in the various rural development policies
- to reach a political consensus at regional level regarding pastoral development

4.2 Humid zones

Humid areas as a whole are not easy to define because of the heterogeneity of this region (different biotopes, socio-cultural and climatic situations). Each biotope (forest, savannah, and steppe) has different opportunities and constraints. In general access to water is not problematic in humid zones. Livestock keeping is mainly done by agro-pastoralists integrating livestock breeding and agriculture.

The group identified a lot of constraints and gave some advice for improvement.

4.2.1 Environmental issues

- Demographic pressure is an important threat in that zone
- Lack of and therefore competition for grazing land often lead to overgrazing
- deforestation and subsequent erosion and land degradation reduce the available land

- in general, fertile land is available but there is a decreasing soil fertility due to erratic management
- conflicts between farmers and livestock owners are important in that zone

4.2.2 Animal husbandry

- Existing systems are mostly semi-intensive breeding systems or, in case of poor soil fertility, extensive ones
- Local breeds are not very productive but adapted to local conditions and locally accepted but genetic improvement by selection of local breeds is possible.
- Some limited crossbreeding is possible but not always well-founded: inbreeding, loss of trypanotolerance, unsuitable feeding resources are common problems created by crossbreeding
- preservation of genetic biodiversity is necessary
- Grass is sufficient in quantity but of poor quality. The fodder production is insufficient leading to increasing feed prices
- grassland management programmes (livestock density control, bushfires, pasture improvement) have to be implemented
- Silage production and the use of agro-industrial by-products can improve the quality of the animal nutrition
- Agrosylvopastoralism can help to overcome temporal food shortages (carbon sink).
- There is a real competition for cereals between men and monogastric animals (poultry, pigs, ...) and between men and ruminants for arable land
- Not only ruminants but also monogastrics, mini livestock and pisciculture can be a solution for poor rural humid areas

4.2.3 Animal health issues

- Animal health is one of the most important constraints in humid areas especially parasitic and vector-borne diseases
- This stresses the importance of adapted breeds

4.2.4 Capacity building and support to farmers

- Farmers have to get organised around specific objectives (e.g. to obtain fair prices, more important political impact)
- Microcredit and development of farmers' associations can encourage poor people to keep livestock
- Capacity building must ultimately be taken over by technical assistants (extension, animal product transformation, ..)

4.2.5 Trade

- Lack of marketing facilities and infrastructures as well as of market information are noted

- Imbalance in risk sharing between producers and traders exists
- The application of international trade policies to maintain fair competition with the meat imports from abroad is thus required

4.3 Urban areas

The major features of urban Livestock production (ULP) identified by the group are:

- The dramatic increase of the urban population in developing countries
- The high complexity of the system (rural-urban continuum, environment, people, animals, disease threats, economical aspects, energy issues, political issues...)
- The fact that ULP is predominantly part of the informal sector of activities

The most important challenges faced by ULP and possible solutions are:

4.3.1 Animal husbandry

- ULP commercial systems use improved breeds that need more feed than unimproved ones. A possible solution is the use of local breeds but preliminary inventory of all local breeds and a study of their performances are much needed
- The use of improved breeds risks to induce a shortage of feed and fodders on the market
- Are large ruminants still sustainable in the city? They can eventually be replaced by small species but this depends on people's demand
- Competition mankind-animals for food (e.g. dairy cattle, poultry, ...) is clear-cut in the city
- The increase in biofuel demand induces higher prices for concentrates

4.3.2 Animal health

- In cities, there are important animal health delivery problems (e.g. Nigeria: huge increase of urban/periurban poultry production threatened by diseases like avian influenza). Government should make drugs and vaccines available and strengthen the urban animal health service delivery.
- Animal health services can be sustainably delivered by urban community based health workers
- Zoonotic diseases spread faster in cities. Keeping animals in households increases the risk of transmission. Education regarding general hygiene and quality of animal products can be helpful
- The lack of urban waste management in general can cause disease in animals, e.g. ingestion of plastic bags (the so-called "plasticosis")

4.3.3 Environmental issues

- Cities are expanding fast and rural land is becoming periurban or urban land (the so-called urban-rural continuum). This phenomenon induces in a dramatic shortage of land (also related to problems of land ownership). A possible solution is to improve the urban land management and urban planning

- Dairy products are commercially attractive and this results in high cattle concentration in periurban areas inducing an increased pollution. Better waste management and improved husbandry techniques are required
- To the question whether there are differences between cities in humid, arid or coastal regions, the group answered that there are similar trends and therefore common solutions

4.3.4 Human factors and capacity building

- Urban livestock production may involve large market-driven large farms but is mainly small-scale subsistence farms. These latter can benefit from application of better husbandry techniques and marketing advices to generate incomes. So training of (poor) people can help them adapt to market demand
- Migrations result in an increase of the population in the cities. The authorities have to take account of this socio-cultural fact
- Government should develop rural animal production to avoid population flows to the cities
- Government should acknowledge the existence of urban livestock production. Recognition of this spontaneous trend will increase its visibility and allows better control and guidance
- All stakeholders (authorities, communities, ...) should be involved in discussion and policymaking in a participatory approach so that the real demand of the different population groups could be taken into account

4.3.5 Trade

- Feed prices are also increasing due to the surge of energy prices that in turn induced a dramatic competition with biofuel. This can be an obstacle to ULP development.
- To guarantee food supply of the cities, decentralisation of infrastructures (milk collecting plants, ...) will help
- Access to credits for poor urban livestock keepers should be increased
- Cities food security is threatened by the industries demand for land (e.g. mines in DR Congo) reducing the available rangeland
- concentration of farms in and around the cities due to market proximity and access to cheap feed – concentrates - (e.g. pig farms in Kinshasa) and increased prices of animal products coming from the countryside are mainly induced by bad road infrastructure

5 Conclusion

The workshop identified important factors threatening animal production in three agro-ecological zones and formulated some recommendations.

It appears that a more multidisciplinary approach, including sociological, economical and other technical disciplines (forestry, ..), is necessary to fully comprehend all the different aspects related to sustainable livestock production in the tropics and to formulate adequate recommendations.

Indeed, the presentations of the key-note speakers show that many things are changing. Even if agriculture in general has been repositioned at the centre of the development agenda, the focus has moved from production to market demand and income generation and from primary production to value chain. Livestock development needs to be considered in a broader policy context and this requires to resort to other disciplines than animal health and production. The importance of emerging and re-emerging zoonotic diseases urges also to consider a “one-health” approach combining human and animal health.

The expertise built in Belgium with partners abroad makes this more holistic approach possible.

In the nearby future, be-troplive is ready to assume this support to decision-making in close collaboration with other stakeholders involved in the Belgian Development Cooperation for the benefit of the end-users, e.g. the populations of the South.

Annex 1 : programme of the workshop

Workshop

Sustainable livestock production in the tropics

21 November 2007

Venue: Egmont Palace, Petit Sablon 8; 1000 Brussels, Belgium

Objectives of the workshop:

- 1° to identify and conceptualise the new challenges of livestock production
- 2° to identify new strategic tools to make livestock production sustainable in the tropics

Programme

time	subject	presenter
9h00	registration and welcome coffee	
9h30	Welcome address	Pierre Dorny (Chairman be-troplive)
	Brief introduction to the topic of the workshop	Guy Hendrickx (moderator)
9h45	The Belgian Development Cooperation in the field of tropical animal health and production	DGDC/BTC
10h15	Keynote on the current challenges in tropical animal health	Jakob Zinsstag (Swiss Tropical Institute, Basel, Switzerland)
10h45	Coffee Break	
11h05	Keynote on the current challenges in tropical animal production	Chedli Kayouli (INAT, Tunis, Tunisia)
11h35	Discussion	moderator (Guy Hendrickx)
11h50	Grouping by agro-ecological zones (arid, humid and urban)	moderator (Guy Hendrickx)
12h	Groups join the meeting rooms	
12h30	Lunch Break	
13h30	Continuation of groups work	
15h 00	Coffee Break Chairmen and secretaries prepare the reports	
15h30	Plenary session with reporting of the groups (with powerpoint) and general discussion (20 minutes per group)	Guy Hendrickx (moderator)
16h30	Conclusions of the workshop Results of the elections for the new Steering Committee – breaking news wrap-up	moderator (Guy Hendrickx) Eric Thys (be-troplive) Pierre Dorny (Chairman be-troplive)
17h00	Reception in tapestry hall	

Annex 2 : List of participants (alphabetic order)

Name	First name	position/institution	Country
AMAKPE	Félicien	Student ULG	Benin
ANDRIKAYE	Jean Pierre	Student ITM	Cameroon
BALIS	Bart	President of VSF-B	Belgium
BEDERT	Els	Project Coordinator VSF-B	Belgium
BINDELLE	Jérôme	Researcher Unit of Zootechny/FUSAGx	Belgium
BOURGEOIS	Serge	Veterinarian APEFE	Belgium
BOURGOT	Isabelle	Student ULG	Belgium
BRISME	Christophe	Agronomist SOS faim	Belgium
BULDGEN	André	Lecturer Unit of Zootechny/FUSAGx	Belgium
CIVAVA MUSHIZI	René	Student ULG	DR of the Congo
COUVREUR	Yves	Geographic adviser BTC	Belgium
DE DEKEN	Redgi	Senior researcher ITM	Belgium
DEHOUX	Jean-Paul	Lecturer UCL	Belgium
DELESPAUX	Vincent	Senior researcher ITM	Belgium
DHOLLANDER	Sofie	Scientific Officer EFSA Parma	Belgium
DINKA	Hundama	Student ITM	Ethiopia
DOCQUIER	Dorothee	Student ULG	Belgium
DOPPAGNE	Marie-Laure	Student ULG	Belgium
DORNY	Pierre	Lecturer ITM	Belgium
DOSSA	Sedjro Justine	Student ULG	Benin
DUGUMA	Reta	Student ITM	Ethiopia
EHSAN	MD Amimul	Student ITM	Bangladesh
EKONG	Pius Stephen	Student ITM	Nigeria
GBANSARA	Marthe Sany	Student ULG	Guinea
GEERTS	Stanny	Lecturer ITM	Belgium
GEZAHEGN	Aboset	Student ITM	Ethiopia
GHYS	Emmanuelle	Student ULG	Belgium
GOTOAS	Yssarta Sanué	Student ULG	Central African Republic
HARMEGNIES	Dimitry	Student ULG	France
HENDRICKX	Guy	Avia-Gis	Belgium
HORNICK	Jean-Luc	Researcher Faculty of Veterinary Medicine/Ulg	Belgium
HOZA	Fitina	Student ITM	Tanzania
IBBARA ROSERO	Edison Marcelo	Student ITM	Ecuador
INGABIRE	R.Angélique	Student ULG	Rwanda
ISLAM	Mohammad	Student ITM	Bangladesh
KALDERS	Jos	Attaché D4 DGOS	Belgium
KALENGA	Hortense	Student ULG	DR of the Congo
KAMBASHI MUTIAKA	Bienvenu	Student ULG	DR of the Congo
KAYOULI	Chedli	Professor INAT Tunis	Tunisia
LAHJOU	Jean Claude	Student ULG	Cameroon
LEMPEREUR	Laetitia	Student ITM	Belgium
LEONARD	Hervé	Responsible for Senegal & Burkina Faso SOS Faim	Belgium
LYARUU	Eugen Albert	Student ITM	Tanzania
MAMOUDA	Bachar	Student ULG	Niger
MAZIKU	Joseph William	Student ITM	Tanzania
MEDZA MVE	Samson	Student ULG	Gabon
MONTUMA	Oriole	Student ULG	Haiti
MORIN	Florence	Veterinarian AIDCO European Commission	France
MOSHA	Roggers Mark	Student ITM	Tanzania

OGALI	Irene	Student ITM	Kenya
OLANA	Ginbar Tefera	Student ITM	Ethiopia
ONCLIN	Madeleine	Director VSF-B	Belgium
OWOLODUN	Olajide Adewale	Student ITM	Nigeria
PAUL	Suman	Student ITM	Bangladesh
PONGOMBO	Célestin	lecturer Faculty of Veterinary Medicine/UNILU	DR of the Congo
POURTOY	Geneviève	Student ULG	France
PRAET	Nicolas	Junior researcher ITM	Belgium
RAPANOELA	Rija Herman	Student ULG	Madagascar
RENAULT	Véronique	Coordinator for West-Africa VSF-B	Belgium
ROY	Krisna	Student ITM	Bangladesh
RUPPOL	Patrick	Scientific Responsible BioForum	Belgium
SAINTILUS	Pierre Antoine	Student ULG	Haiti
SIMBIZI	Vincent	Student ITM	Rwanda
SIMONS	Patrick	Attaché D.1.1.1.b DGDC	Belgium
STEINMETZ	Philippe	Policy Officer EC DG / DEV	Belgium
TAHA	Somia	Student ITM	Sudan
TERREN	Marieke	Student ULG	Belgium
TIMMERMANS	Edouard	Responsible West-Africa VSF	Belgium
THYS	Eric	Senior Researcher ITM	Belgium
TOURE	Abdoulaye	Student ULG	Mali
VAN WAEYENBERGE	Sofie	Geographic adviser BTC	Belgium
VERHULST	Antoine	emeritus ITM	Belgium
VERLE	Paul	Middle Manager EST	Belgium
VINUEZA BURGOS	Christian Vinicio	Student ITM	Ecuador
VU THI	Nga	Student ITM	Vietnam
VU VAN	Hai	Student ULG	Vietnam
WOLDESEMBET GELETA	Zerikun	Student ITM	Ethiopia
ZINSSTAG	Jakob	Assistant Professor Swiss Tropical Institute	Switzerland