

SUMMARY OF THE FSN FORUM DISCUSSION NO 37  
**FOOD SECURITY IN ARID AND SEMI-ARID LANDS : THE CHALLENGES OF  
SUSTAINABLE USE OF SCARCE RESOURCES**  
FROM 15TH JUNE TO 10TH JULY 2009

Proceedings available at  
[http://km.fao.org/fileadmin/user\\_upload/fsn/docs/PROCEEDINGS\\_FOOD\\_SECURITY\\_IN\\_ARID\\_AND\\_SEMI-ARID\\_LAND.doc](http://km.fao.org/fileadmin/user_upload/fsn/docs/PROCEEDINGS_FOOD_SECURITY_IN_ARID_AND_SEMI-ARID_LAND.doc)

## **I. ISSUES RAISED**

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Arid and semi-arid lands (ASALs) have been facing multiple development issues, such as:

- Changing and unpredictable weather patterns,
- Uncontrolled increasing human population;
- Uncontrolled growth of cattle leading to conflicts over scarce resources
- Pastoral communities lack both political visibility and political clout
- Encroachment of intensive agriculture, which interferes with migratory patterns of the pastoralists/nomads
- Local livestock breeds are at risk of extinction
- Ineffective approaches by development organizations and the Government

Participants shared insights, success stories and good practices on the sustainable use of resources, which is recognised as the long-term solution for ASALs' food security.

## **II. OPINIONS AND SUGGESTIONS**

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- **The vital role of pastoralists and their livestock in ASALs:**
  - Livestock are a major source of food security for local people while also providing huge, though often unrecognised, benefits for the wider national and regional economy. In addition to providing nutritious diets, they are critical capital assets. Livestock can be sold to purchase food, fibre, fertilizers and fuel. It provides draught power and transportation and can be used as collateral for credit and as buffer against crop failure and other risks (C. Hesse, A. Raziq).
  - Livestock reared in pastoral areas support a multitude of other livelihoods not only in the drylands but other areas as well - e.g. actors involved in the substantial cross-border livestock trade, small town traders importing cereals from farming areas and other commodities, etc.
  - Pastoralists generally do not rely solely on livestock but practice a range of other activities to diversify their livelihoods such as trading with small towns, small-scale rainfed agriculture where conditions allow (C Hesse)
  - Pastoralism is the most suitable livelihood and land-use system in ASALs: extensive production system with low emission of phosphates, no accumulation of dung and gases, which do not pollute the land or water resources; use of resources which are otherwise wasted (saltish, bitter and thorny vegetation of the rangeland, brackish and muddy water) (A. Raziq). It is the most appropriate land-use system which enables people to adapt by moving livestock according to the shifting availability of water and pasture (J. Opio-Odongo).

- Livestock keepers are at the centre of sustainable food production in ASALs. They are custodians of animal genetic resources for food and agriculture (A. Raziq).
- **Suggested measures and approaches in supporting pastoralists:**
  - Empower the pastoralist communities to influence policy and programming. The capacity to make informed decisions of the communities should be enhanced (H. G. Muriuki, D. O. Nkedianye, A. Raziq, J. Opio-Odongo).
  - Recognize and protect the pastoralists' land and resource rights. It's critical that pastoralists have land tenure rights and the right to negotiate access to resources (C. Hesse, J. Opio-Odongo)
  - Livestock have to be mobile to cope with ASALs' constraints, such as the dispersed and unpredictable nature of resources. It's critical that pastoralists have the right to move with animals including cross-border (this is critical as most borders in Africa divide pastoral lands dividing pastoralists from their wet and dry season grazing. This requires that decision-making be devolved to institutions that include, and possibly are based on customary institutions (C. Hesse).
  - Manage trans-boundary issues and resource-use conflicts, so that the inevitable cross-border movement of pastoralists and their livestock become orderly (J. Opio-Odongo)
  - Document and maximize the use of indigenous knowledge in managing resources and production in ASALs (A. Raziq, Salomeyesudas)
  - There is a need to adapt systems for measuring natural resources and production models according to ASALs' conditions. 'Unpredictable variability' in the drylands refers chiefly to precipitation that is not uniformly distributed in space and time, with its complex consequences on a rich diversity of soil and vegetation. All systems for measuring 'natural resources' on the range (e.g. precipitation, biomass, carrying capacity, etc.) rely on the meaningful possibility of average values. In ASALs that are driven by unpredictable variability, applying such systems/models of agricultural production that rely on uniformity and regularity is problematic (S. Krätli).
  - Improve market access to enable the population in the ASAL market livestock and other livestock products plus other valuable products that can be produced from the ASAL resources. Access to global markets and the equitable sharing of revenues accruing for it with the ASAL communities can help promote sustainable livelihoods (J. Opio-Odongo)
  - Manage vulnerability, especially vulnerability to both poverty and climate change. The marginalization of the ASAL communities within the political economy is an issue that deserves special attention. Vulnerability-proofing of macro-economic and other policies vis-à-vis the livelihood needs of the pastoralists is essential (J. Opio-Odongo).
  - In Pakistan in particular, it's important to conserve the local livestock breeds, which are under serious threats of extinction. It's recommended to create more added value to livestock products (especially milk), do niche marketing for the product of the breeds under threat and carry out in- situ conservation with the help of livestock keepers (A. Raziq).

### III. CASE STUDIES AND GOOD PRACTICES

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- **The success story of the WoDaaBe herders of Niger** (S. Krätli): The WoDaaBe are highly specialised cattle keepers. They produce most of the Bororo zebu breed, which is the most exported cattle breed in the country. Their key to success is a complex breeding and management system aimed at minimising all disturbances in the production environment (including human and other cattle). The highly unpredictable variability of the Sahelian environment are turned by the WoDaaBe into a key resource for production. The production system uses strategic mobility and competent teams of animals for targeting and exploiting the short-lived concentrations of nutrients characteristic of the Sahelian range.

The main lesson learnt is that “natural resources” are treated as objectively defined but they are not. What is ‘resource scarcity’ for a particular set of producers (because of the ways they use the environment) can actually be a valuable resource for another set, capable of using the environment in different ways.

- **The case of SAVES (Society of Animal, Veterinary and Environmental Scientists) in Pakistan** (A. Raziq): Created in 2005 SAVES’s mission is to organize the livestock keepers, to ensure the livestock keepers rights, help maintain a livestock friendly ecology, work on the characterization and documentation of the local livestock breeds and to document and validate the indigenous knowledge about the breeding, feeding and health management of their breeds.  
SAVES’s achievements:
  - The livestock keepers have enhanced awareness about their importance for the well-being of animal agriculture and livestock production.
  - The loss of many livestock breeds has reduced through consultation and discussion with the relevant breed keepers.
  - SAVES has contributed to fighting epidemic diseases of livestock by providing free of charge medical campings/visits.
- **Reto-o-Reto project** (<http://www.reto-o-reto.org/>) (D. O. Nkedianye): the project is designed to create the knowledge and relationships to enable poor pastoral and agro-pastoral communities to influence local and national land-use policies affecting their livelihoods (access to pasture, water) and the sustainability of biodiversity (wildlife) in the areas where they live.
- The market access programme of the Drylands Development Centre in Nairobi (<http://www.undp.org/drylands/>) is yielding valuable experiences and lessons in market access for pastoralists (J. Opio-Odongo)  
[http://www.undp.org/drylands/docs/marketaccess/Market\\_Access\\_Policy\\_Study-Kenya.doc](http://www.undp.org/drylands/docs/marketaccess/Market_Access_Policy_Study-Kenya.doc).
- **Vulnerability management lessons:** Kenya can draw useful lessons from (1) the manner in which the liberalization and privatization policies that promoted ranching in the ASAL made some of the Masaai communities in Kenya more vulnerable to livelihood insecurity and (2) the manner in which the promotion and privatization of water development (boreholes) in communal grazing land in Botswana by private commercial farmers affected ASAL communities more vulnerable to inadequate accessibility to water and grazing (J. Opio-Odongo)
- GEF regional biodiversity project (<http://www.undp.org/gef/>) and the market access project of the DDC (<http://www.undp.org/drylands/projects-market-access.html>) offer useful lessons, with profound governance implications on the management of trans-boundary issues and resource-use conflicts (J. Opio-Odongo)

- **Livestock Emergency Guidelines and Standards Project (LEGS)** (C.Watson)  
Concerns expressed by a number of humanitarian and development agencies about the quality of disaster response in livestock-keeping communities resulted in the Livestock Emergency Guidelines and Standards Project (LEGS). Where livestock-based responses are implemented, they may be too late, or inappropriate, or undermine existing private sector services that are vital for the long-term survival of local livelihoods. A set of international guidelines and standards were proposed, following the process and format of the Sphere project, to promote a livelihoods-based approach to disaster response that sees livestock as a key livelihood asset. Further information are available on the LEGS website: [www.livestock-emergency.net](http://www.livestock-emergency.net).
- **The case of West Timor: permanent raised beds – good practice in land management** (A. Borrell): in West Timor, key constraints to production are drought, water-logging, poor soils and erosion and more than 90% of the rain falls in a distinct wet season between November and April. Crop production depends on the efficient use of rainfall during the wet season, including avoidance of waterlogging, and efficient use of stored soil water during the dry season.

Raised beds greatly enhance the probability of attaining both wet and dry season crops each year. Construction of raised beds prior to the wet season in lowland areas, and maintenance of permanent structures thereafter, enables crops to be sown at the onset of the wet season, and to anticipate the sowing of drought resistant crops in the dry season such as sorghum taking advantage of the water stored in the beds. Appropriate mechanisation might be used in the construction and maintenance of the beds.

These concepts were further expanded and developed on the island of Lombok, Indonesia between 2001 and 2007 in an ACIAR (Australian Centre for International Agricultural Research) project. The adoption of these ideas by farming communities in southern Lombok has been a success story.

#### IV. REFERENCES

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Access to water, pastoral resource, management and pastoralists' livelihoods- Lessons learned from water development in selected areas of Eastern Africa (Kenya, Ethiopia, Somalia) (R. Santini)  
<http://ftp.fao.org/docrep/fao/009/ah247e/ah247e00.pdf>

Good Practices in Agricultural Water Management- Case Studies from Farmers Worldwide (R. Santini)  
[http://www.un.org/esa/sustdev/csd/csd13/documents/bgound\\_3.pdf](http://www.un.org/esa/sustdev/csd/csd13/documents/bgound_3.pdf)

Oxfam Briefing Paper 116 – Survival of the Fittest: Pastoralism and Climate Change in East Africa (J. Opido-Odongo). It focuses on climate change, political and economic marginalization, inappropriate development policies, and increasing resource competition  
<http://www.oxfam.org/policy/bp116-pastoralism-climate-change-0808>

Informative websites on local knowledge in sustainable resource management and production in India (Salomeyesudas).  
[www.ddsindia.com](http://www.ddsindia.com)  
[www.apfamgs.org](http://www.apfamgs.org)  
[www.keystone-foundation.org](http://www.keystone-foundation.org)  
[www.mcgill.ca/cine](http://www.mcgill.ca/cine)

Policy Analysis Study - Improving Marketing Access for Drylands Commodities Project  
[http://www.undp.org/drylands/docs/marketaccess/Market\\_Access\\_Policy\\_Study-Kenya.doc](http://www.undp.org/drylands/docs/marketaccess/Market_Access_Policy_Study-Kenya.doc)

Livestock Emergency Guidelines and Standards webpage  
<http://www.livestock-emergency.net/>