Ton Dietz, Ruerd Ruben, Jan Verhagen, with Saa Dittoh, Mama Konaté, David Millar, Edward Ofori-Sarpong, Hassane Saley & Ndiayé Cheikh Sylla, 2004, Climate Change Preparedness in West Africa. In: A.J.Dietz, R. Ruben & A. Verhagen, eds, The Impact of Climate Change on Drylands, with a Focus on West Africa. Dordrecht/Boston/London: Kluwer Academic Publishers. Environment and Policy Series, Vol. 39; pp. 403-408.

CHAPTER 24

CLIMATE CHANGE PREPAREDNESS IN WEST AFRICA

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1. POLICY PRIORITIES

At the final ICCD workshop in Wageningen (April 26-27, 2001) three groups of experts, chaired by African scholars, listed a number of policy priorities for African governments, for interested donor countries and for interested scholars to enable them to become better prepared for climate change (rising temperatures, lower rainfall, and less reliable rainy seasons). Later, 22 of these experts gave priorities to 16 major policy statements. Some of these experts had participated in the ICCD research activities[1] and others were invited guests, from Africa (Saa Dittoh, David Millar, Francis Obeng and Edward Ofori Sarpong from Ghana, M. Konaté from Mali, Hassane Saley from Niger and Ndiaye Cheikh Sylla from Senegal) and from elsewhere (Peter Hazell from IFPRI, Washington, Thea Hilhorst from IIED, London; Chris Reij from the Free University, Amsterdam, the Netherlands).We will give the outcome of the prioritisation exercise:

Highest priorities

1 In all Sahelian countries adequate early warning systems should be (further) developed and operational assistance should be given to governments to enable them to develop effective indicators and to communicate early warning messages more effectively to the relevant institutions and to the farmers and pastoralists in the region. This Early Warning Data should also guide famine relief operations. The experiences in Mali (since 1983) could be used as a guideline.

2 The development of knowledge of climate change and climate variability and of adaptations in the Sahel region should be improved (and well as knowledge of the world's drylands in general). This should facilitate the integration of scientific disciplines that deal with the issue (agro-biological sciences, geography, anthropology and economics in particular), partly on the basis of a more effective operationalisation of relevant concepts, and partly by joint empirical (field-)work.

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[1] From the Netherlands: Mark Breusers, Johan Brons, Mirjam de Bruijn, Ton Dietz, Han van Dijk, Kees van der Geest, Ali de Jong, Herman van Keulen, Arie Kuijvenhoven, Ruerd Ruben, Arjen Schijf, Josée van Steenbrugge, Fred Zaal.

3 Adaptive technologies should be developed and tested, for agriculture, (agro-) pastoralism, sylviculture and horticulture; the adequacy of more 'northern' technologies should be tested in more 'southern' areas, supposing that the semi-arid zone moves southward.

4 Existing social security mechanisms should be maintained and new ones developed. More knowledge is needed about the functioning of social security networks and mechanisms during and after catastrophic events (e.g. droughts; floods; locust invasions).

5 More attention should be paid to migration (and related remittance and remittance investment practices) and the importance of migration for both rural and urban economies should be redefined. Agricultural policy in the region should be more aware of the role of geographical mobility, not only in pastoral systems but in arable systems as well. Agricultural policy should also take (growing) urban demand as a point of departure and when assessing urban demand more attention should be paid to the (growing) importance of non-local sources of this demand.

6 The governments in the Sahel region should develop policy positions on land and water issues: ownership, access, control, investments and benefits, with specific attention for aspects of equity and for the livelihood of mobile persons/groups. It is important to map areas that are still relatively under-utilised in the sub-humid zone and to develop policy guidelines for sustainable land and water utilisation in these hitherto relatively 'empty' zones. It is also important to look specifically at the land and water 'entitlement' changes in the peri-urban areas in the region. In looking at the possibilities for policy interventions, careful attention needs to be paid to implications for inter-ethnic relations and potential violence.

Medium priorities

7 Attempts to decentralise policy formulation should be strengthened and operationalised/ implemented. The financial strength of the local government system needs to be built up as well as the capacity to monitor land use changes and to implement regulatory arrangements for local-level situations.

8 Public investments in two types of infrastructure should be given priority: education and water. Education is partly needed to make people less dependent on agriculture. Water investments are needed to make agriculture and animal husbandry less dependent on rainfall (irrigation, water harvesting technology, water for animals), to make people less dependent on rainfall for their drinking water, and to enable water-dependent forms of industrialisation and energy production. In developing groundwater dependent forms of irrigation (and other water 'production') groundwater levels should be better monitored and groundwater depletion prevented.

9 The policies on subsidies should be redefined to take advantage of international agreements, e.g. on 'carbon sinks'.

10 More research is needed on drought-resistant, early-maturing crops and varieties (agriculture should become less vulnerable). The exchange of information is important within the region and with other institutions in the drylands elsewhere in the world, which are leaders

in the development of dryland agro-technology. The role of ICRISAT could be strengthened and its geographical coverage could become wider.

11 Non-governmental organisations, community-based organisations and farmers' organisations should be strengthened and these institutions should be involved in the formulation and implementation of (government and donor) policies. The institutional capacity of these non-governmental agencies is crucial in coping with deteriorating situations. The strengthening of government institutions (central and local) should never undermine the resilience of the local-level non-governmental institutions.

Lower priorities (but still important)

12 Scientific models should be developed to facilitate a better understanding of adaptations over time and responses to periods of droughts (some experts gave this as a low priority because they think these models already exist, e.g. the pathway approach, and the major task ahead is to subject 'models' to additional testing).

13 Micro-credit systems (and micro-insurance systems) should be strengthened to enable people to cope better with drought shocks. This could be one of the new approaches of priority no. 4.

14 Further co-operation is needed between research centres in the region and between those centres and research centres abroad, to enable more efficient and more rapid dissemination of results (this is an extension of priority 10).

15 The (econometric) models which were used in the ICCD research need to be re-evaluated in terms of parameters used and modules included.

16 The attention for the impact of climate change on drylands should take a larger area into account (include the arid as well as the humid areas).

2 Implications for research.

In order to reinforce policy-making in response to climate variability, a number of strategic research areas can be identified that are of critical importance for the development of adequate risk-coping or mitigation strategies.

At four different levels some important areas for further research can be identified:

a) Plot-level research
- critical indicators for water availability and their impact on (potential) yields;
- water availability from rainfall and groundwater level;
- rainfall variability and yield risks;
- crop substitution patterns (sorghum-millet).

b) Research at Farm Household level
- yield differences between farmers facing similar drought risks;
- food security strategies through diversification or specialisation;
- food security based on farm and non-farm income sources;

- livestock keeping for production and insurance purposes;
- energy requirements and forest rehabilitation;
- relationship between ethnicity and selected development pathways.

c) Research on village and regional level
- spatial 'mobility' of crops under changing rainfall regimes;
- adjustment of farming practices by migrant populations;
- relations between tenure change and land use patterns;
- rainfall risks and implications for land concentration;
- external (food) aid and the disruption of mutual assistance systems.

d) Research on (inter)national level
- impact of price distortions on incentive regimes for food security;
- impact of climate variability on market prices;
- prospects for (inter)national insurance systems.