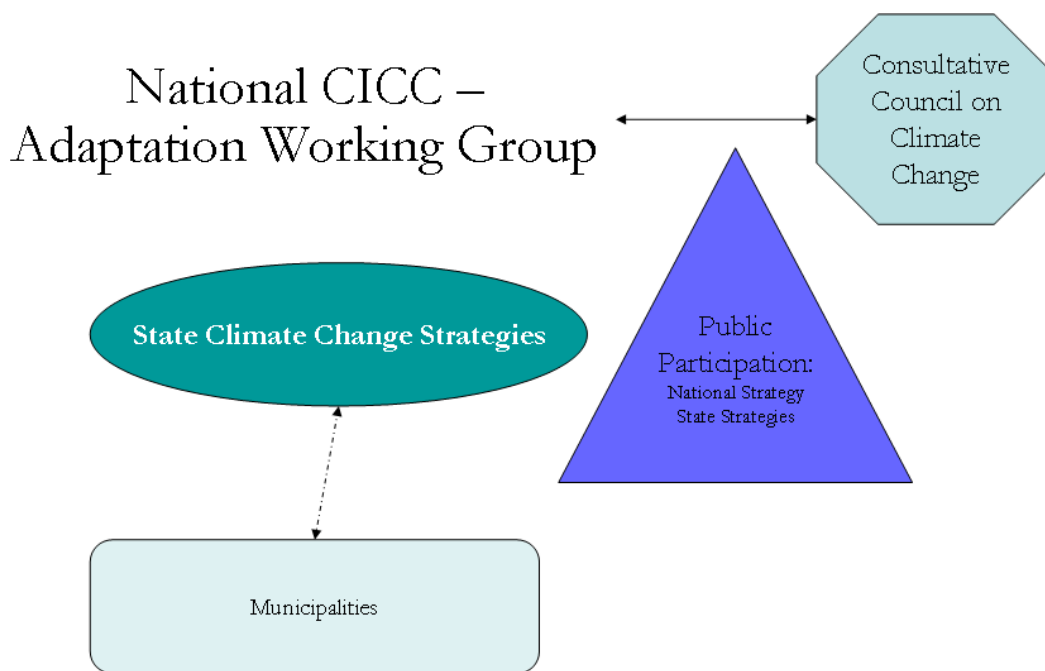


## Annex 1 – Country experiences summarized

### 1. Mexico

Mexico provides a particularly interesting example of a developing country that has moved a fair way towards the development of a robust adaptation strategy. After the creation of the Inter-Ministerial Commission on Climate Change (CICC) in 2005, chaired by the Ministry of Environment (INE), the Working Group on Adaptation has focused on developing a national adaptation strategy. As mentioned in the body of the report, the Working Group is further advised by the Consultative Council on Climate Change, which comprises representatives of the scientific community, the private sector and civil society.

Figure 1: Institutional Framework for Responding to Adaptation



Source: Kramer, 2009

The Working Group on Adaptation represents seven ministries (Agriculture, Communications and Transport, Social Development, Economy, Energy, Foreign Affairs, Finance, Interior, Health,

Education and Marine) and further includes representation of the Ministry of Treasury and Public Credit. The Special Programme on Climate Change (PECC, 2008-2012), as part of the National Climate Change Strategy (ENACC), includes an adaptation focus on insurance, cross-sectoral activities, budgetary allocations for prevention planning, and a clear integration of existing disaster risk initiatives, rather than a focus on developing brand new strategies not aligned with current policy. An additional activity specifically flagged under the Programme focuses on disaster risk reduction, with a clear recognition of hurricane season risk.

Priorities for adaptation listed under ENACC include a review of existing institutional measures for hydro-meteorological risk management (again, focussing on existing initiatives and improved support), a clear need for cross-sectoral coordination and development of “cross-cutting policies” (ENACC 2007, pg 10); and the formal design and implementation of a climate modelling programme within the evolving national climate information system. Further, ENACC rather innovatively prioritizes the use of ecological land use planning in both adaptation and mitigation; critically, the review of policies and budget allocations in the area of prevention planning, a specific look at vulnerability and adaptation assessments at the subnational level, the use of insurance to reduce vulnerability; and the building of human capacity in operational meteorology and climate forecasting (presumably short to long range).

ENACC indicates that the countries key requirements in adapting to climate change include the need to strengthen watershed natural buffering functions, to support information exchange and early warning systems, and to use climate change projections to appropriately adjust water treatment technology. Further, given the vulnerability of the Mexican coastal/marine and biodiversity sector, ENACC emphasizes the role of coastal protection and natural resources regulation in climate change adaptation. This emphasis on the role of the natural environment in adaptation is critical, and is repeated throughout a number of key documents. For example, emphasis is laid on using existing conservation planning initiatives to improve ecosystem adaptation, and on providing incentives to conserve in situ biodiversity in the agricultural sector (the focus here is on joint programmes by the Ministry of Environment and Natural Resources, and the Ministry of Agriculture, Rural Development, Fisheries and Food).

Further, ENACC prioritizes the promotion of synergies between the tourism, fishing and water sectors, and with the National System for Civil Protection in adaptation, an area of clear strategic coordination. Lastly, ENACC calls for the strengthening and support of health surveys and epidemiological monitoring systems, and for support for the construction and design of independent, small scale local energy supply infrastructure (one example might be small-scale local hydropower).

The Special Programme on Climate Change (PECC) essentially starts to implement ENACC. After presentation to President Calderón in May 2007, PECC drew on both ENACC and the Mexican National Development Plan (2007-2012, where climate change is listed as a critical development priority). An initial draft, based partly on 17 sectoral reviews, was published in July 2008; and PECC is partly updated in the Third National Communication (for example, based on new modelling results).

One component of PECC and ENACC is the development of regional and local level adaptation strategies. This has mainly occurred through the development of State Climate Change Strategies (PEACC). 22 out of 32 have already begun the development of the strategies, with complete strategy programmes in Mexico City, Veracruz and Nuevo Leon. Very specific emphasis has been laid here on integrating climate change concerns into existing state strategy and policies.

For example, Veracruz University (Universidad Veracruz) developed the Veracruz National Climate Change Action Plan, partly supported by funding from the United Kingdom Global Opportunities Fund, and in collaboration with the National Autonomous University of Mexico (UNAM) and the Institute of Ecology (INECOL). Veracruz comprises a particularly interesting example of a state considering climate change preparations, since it has a range of highly vulnerable sectors, including coastal/marine. Universidad Veracruz undertook a series of targeted vulnerability analyses, eventually identifying sea level rise as the most significant threat to the coastal region. Further, the risk posed by sea level rise to certain critical sectors, such as the power industry, was analyzed as a matter for priority intervention.

Nuevo Leon, in contrast, focused its strategy centrally around mitigation (Kramer 2010); as one of the country's premier industrialized states. Damages caused by Hurricane Alex in 2010 have, however, encouraged the State to revise its strategy, and to include more of an emphasis on adaptation (informed by disaster risk reduction) and the creation of more resilient transportation and other infrastructure (Kramer 2010).

As of September 2010, progress on the State Climate Change Strategies appeared promising (Bremauntz 2010), with further progress on the 'Mitigation and Adaptation Strategy of the State of Puebla on Climate Change' underway. A portal indicating progress for PEACC is managed by INE, with information voluntarily submitted.

Bremauntz observes, however, that a range of challenges have been encountered in the PEACC

preparation, including limited local capacity and climate change human resources, the lack of systematic and reliable information on production, greenhouse gas emissions and climate/local weather and limited financial resources available for PEACC development. Nonetheless, the progress of Mexico in the area of PEACC, and now with the ensuing focus on municipal strategy development, provides useful insight into subnational adaptation strategy development.

## 2. *Australia*

Australia has made substantive progress towards the development of a robust and comprehensive adaptation strategy. The Department of Climate Change leads the entire government response to climate change, coordinating with other departments in climate change strategy and action. The government is further in the process of establishing a Climate Change Regulatory Authority (with a focus on mitigation). Further, the Council of Australian Governments (COAG) provides a critical forum for co-operation between national, state and territory governments, with, for example a working group on climate change and water engaging in a coordinated response.

The National Climate Change Adaptation Framework, developed in 2007, is designed to guide practical activities on adaptation over a 5-7 year period. Government adaptation actions must further be aligned with priorities identified in the framework, and it further helps local government adaptation actions through funding support for local climate change risk assessments and strategy development. In addition, the National Adaptation Research Plans (NARPs) undertake a research gap analysis, and target research support in relevant areas.

The Framework builds on in depth vulnerability and assessment studies (commissioned by the 2004 Climate Change Strategy) that have allowed sectors be prioritized for mid term intervention (South Africa is undertaking a similar process). Sector prioritization is based on clear criteria, including the extent to which near term decisions may affect long term benefit (again, a very similar discussion to that currently occurring in South Africa); where there is substantive potential for early adaptation planning to provide benefit, and national significance for outcomes. Vulnerable sectors identified include water resources, biodiversity, coastal regions, agriculture, fisheries, forestry, human health, tourism and settlements. The Framework then describes potential adaptation strategies for each sector. Prioritized sectors include agriculture and the coastal zone.

For example, the National Agriculture and Climate Change Action Plan (2006-9) provides national,

state and territory governments with a coordinated framework to guide the climate change response of the agricultural sector. Further, the National Climate Change and Commercial Forestry Action Plan (2009-12) includes some fairly specific activities for adaptation for the sector, including a Forestry Industries Climate Change Research Fund.

Australia is particularly noteworthy in the extent to which it supports research that may be drawn upon to facilitate the development of adaptation (or mitigation) strategies. The National Climate Change Adaptation Facility is critical in this regard, supporting the development of the aforementioned National Climate change Adaptation Research Plans (NARPS) for each sector. NARPS are being developed for terrestrial biodiversity, for the primary industries (terrestrial), for water resources and freshwater biodiversity, for marine biodiversity and resources (including fisheries and aquaculture), for human health, for settlements and infrastructure, for emergency management, and for ‘social, economic and institutional dimensions of adaptation’.

For example, the NARP for Primary Industries identified three broad categories of information required to formulate adaptive response:

1. What type of response is required by a particular enterprise, farm or region in response to projected or realised climate change impacts – that is, to what extent will incremental adjustments of current activities continue to be effective adaptation responses and at what point will changes to production systems or transformations of primary production and regional primary industries be required;
2. How can adaptive capacity be determined and how can it be expanded; and
3. What is the key information required to support incremental, production system or transformational changes.

(National Adaptation Research Plan for Primary Industries, Consultative Draft, pg 4)

Distinction is thus made here between incremental adjustments – e.g. adjustments in existing systems – and changes in production systems – e.g. crop switching, livestock breed switching. Further, information category 2 above specifically asks for an assessment of existing adaptive capacity, as well as information as to how it could be expanded. Thus, existing adaptive capacity (of particular significance in the primary industries where climate risk is by no means a new issue) is the basis for emerging

adaptive strategies.

A further useful focus of the NARP is that of opportunities for the sector (rather than simply the need to adapt to negative impacts). For example, in the case of the cotton sector, research is increasingly showing that higher CO<sub>2</sub> levels may increase photosynthesis, with possible benefits. In the case of rice, research is called for into the possibility of establishing rice cultivation areas in zones which are more suitable or newly suitable, under future climate change conditions. For viticulture, specific attention is paid to the extent to which earlier planting may be facilitated by potential shorter frost seasons. And for stock, in the northern areas, increased research needs to be undertaken into the extent to which increased rainfall may improve forage productivity.

Australia is also distinctive in the area of subnational adaptation planning (as in the case of Mexico). For example, the coastal zone is regarded as an area of critical vulnerability due to, for example, projected (and current) impacts on sensitive production areas and ecosystems such as the Great Barrier Reef. The Great Barrier Reef Climate Change Action Plan (5 years) is linked to the Reef Rescue package, a funding source for land managers in the area to access water quality grants to improve the quality of water entering the reef ecosystem from the land surface. CSIRO have developed a multi-criteria analysis model to more effectively target the funding, developing particular criteria (such as asset value and threats); and then working with stakeholders to weight them. Funds are then accordingly targeted – a useful approach that might be taken in other countries with sensitive, but long, coastlines.

As an urban example, the city of Melbourne, in the state of Victoria, has developed a climate change adaptation strategy that identifies four key climate risks – drought, extreme heatwaves and wildfires, intense rainfall and wind events; and sea level rise. The background analysis investigated Melbourne's current, 2030 and 2070 risks under climate change. Climate change is clearly located within other potential stressors and trajectories for the city – for example unprecedented population growth and population profile (an ageing population).

Thus, a particular focus is provided in the cities adaptation strategy for integrated and cross-sectoral urban planning, and on integrating climate change considerations, where possible, into existing urban strategy. Two key examples are adapting transportation infrastructure planning and scenarios for greater frequency of intense wind and rainfall events; and adapting the cities' public health infrastructure for heatwaves (considered a priority risk; as in the case of South Africa's proposal for Heat-Health days – see below).

### 3. *Jordan*

The Kingdom of Jordan provides an interesting example of a highly urbanized lower middle income country, partly because of very early prioritization of sectors; and also due to a clear emphasis on linking adaptation to sustainable development policies. Adaptation strategies are, for example, requested to be in alignment with Jordan's National Agenda, a long term plan for economic, political and social change. Further, the country already experiences severe water scarcity – it is one of the four driest countries in the world. Water is simply considered the single biggest constraint to development. The economy is also considered vulnerable since there are limited primary energy resources – Jordan is largely dependent on imported petroleum.

Adaptation strategies were developed based on commissioned research for priority areas. Focus sectors, for in depth vulnerability and adaptation studies, comprise agriculture, water, health and socioeconomic. Particular analyses were undertaken on these sectors, including the development of baseline and climate change scenarios; impacts analysis and development of potential strategies (including feasibility assessments) (Salamed 2009).

For example, river watershed analyses were undertaken for the Zarqa and Yarmouk River Basins, including climatic and streamflow data. Both river basins are critical to the agricultural sector; with the Zarqa, for example, comprising one of the major groundwater basins in the country. In the case of analyses for the agricultural sector, wheat and barley were selected as key rainfed crops, and yield simulations were undertaken. The health analysis considered both direct and indirect implications of the climate change scenarios. Finally, the socio-economic study reviewed sector scenarios relevant to climate assessments, and proposed future research directions.

Key impacts for Jordan are considered to be the reduction of agricultural productivity and diminished water availability. The priority in national adaptation strategy thus revolves around agriculture and water, and, most particularly, irrigated agriculture (the largest user of water in the country). The high value farming area of the Jordan Valley is considered an area for critical intervention, with future water demands considered difficult to justify. Adaptation interventions are thus focused around increasing water use efficiency in the irrigated agriculture sector, the implementation of conservation agriculture (including crop rotation, minimum tillage, retention of soil organic carbon and other measures), enabling of water harvesting measures, supervised irrigation with treated wastewater and community based management of rangeland resources in response to conditions of increased climatic risk in the livestock sector.

Jordan's Second National Communication calls for the revision of policies on agriculture and water to take climate change into account; and the application of more targeted assessments. Such assessments are proposed to include an in depth mapping and agroecological zones project, in part in response to the extent that urban expansion has, in certain areas, driven irrigated agriculture into more marginal areas, and the development of an early warning and risk management system. In all sectors, the lack of national plans and strategies for adaptation is considered a critical constraint.

Adaptation strategies for the health sector are proposed to include the strengthening of public health and epidemiological surveillance (as in the case of South Africa), and the development of a health forecast system for respiratory and other climate sensitive diseases. Particular emphasis is placed on prevention, and on public awareness and capacity building. A significant gap, and one targeted for attention, is the lack of baseline information and data on health and climate change. For example, the structure of the health reporting system in Jordan is recommended to be altered to enable more detailed reporting.

In the socioeconomic sector, adaptation measures were proposed to include the establishment of a Climate Information System (CIS) that would essentially perform the function of weather and climate risk warning to farmers. Further, capacity building in the area of community based adaptation, the establishment of a 'National Disaster Fund' for farmers, and improved institutional capacity for dealing with climate risk for proposed.

In the case of subnational adaptation strategies, the Green Growth Program of the City of Amman provides a clear example of the extent to which city managers may attempt to integrate climate change considerations into existing planning. As part of a series of strategies for the Greater Municipality of Amman, the plan focuses on urban design for sustainable development (where climate change is one of a range of objectives). For example, High Density Mixed Use (HDMU) development areas are identified for selected corridors and sites across the city to encourage 'smart growth'; and to encourage densification, as opposed to sprawl. One emphasis here, for example, is to avoid overloading water and sanitation systems – a strategy that would further make the city more resilient to hydro meteorological stress. The Municipality effectively divides the area into Red Zone (no HDMU), Orange Zone and Green Zone (potential site for HDMU) for future planning, including areas for potential intensification and for future regeneration (Maani 2007)



#### 4. *Egypt*

Egypt's Initial National Communication, undertaken in 1998, focused on building national capacity for adaptation and identified the most vulnerable sectors as agriculture, water resources and the coastal zone. In 2007, the National Climate Change Steering Committee was decreed (having been first established in 1997) and began the process of preparing a National Climate Change Adaptation Strategy. Further, an Interministerial National Committee for Climate Change was established and headed up by the Minister of Environment, while the Ministry of State for Environmental Affairs have increased their support for their Climate Change Unit.

In May 2010, Egypt presented their Second National Communication, which included a number of elements of adaptation, and had again as key prioritized sectors agriculture, water resources and integrated coastal zone management, specifically. A range of policies were proposed for adaptive response. For the coastal zone, activities around the creation and/or restoration of wetlands in low lying areas to improve the potential for disaster mitigation and to counteract storm surges were considered; in addition to a proposed continuing focus on the restoration of sand dune systems for stabilization and coastal protection. Further, the 2NC considered support for the sustainable management and/or restoration of the coastal lake system critical in this regard.

For example, research in Egypt has used a range of data inputs, including digital elevation models and satellite imagery to map the coastal area. Such mapping indicates areas of likely inundation under storm surge, for example; and thus gives an indication of coastal vulnerability. Such criteria may then be used as a basis for prioritizing areas for the above types of interventions.

Proposed interventions for the water sector include customized downscaling to be applied to streamflow models for the Nile Basin – to inform future management intervention. Further, improved regional collaboration (beyond Egypt) is considered, including transboundary basin analyses and management. Further interventions concern the building of public awareness around current and future projected water shortages.

Proposed interventions for the agricultural sector include appropriate adjustments to planting and sowing crop calendars in response to projected changes in seasonality. Further, significant changes to the irrigation regime are recommended, as informed by the finding of the aforementioned hydroclimatic projections research – effectively aimed at reducing the vulnerability of the on-farm irrigation systems. The introduction of a special adaptation fund to support the agricultural sector is

further proposed; while emphasis is placed on the development of uncomplicated and low input technologies for local application.

The World Bank Programme technical assistance has focused further on vulnerable sectors, with some proposals for intervention including the mainstreaming of adaptation into national plans. Further, and possibly linked to the proposal of an adaptation fund for the agricultural sector above, the programme is supporting the development of incentive schemes for the private sector to support adaptation.

## 5. *Spain*

Spain has established a National Plan for Adaptation to Climate Change (PNACC), with a fairly detailed institutional structure in place; including an InterMinisterial Group on Climate Change (OECC), as well as the Spanish Bureau of Climate Change (OECC) which coordinates and undertakes follow ups to the National Plan for Adaptation. Further, the country has established a Coordination Commission of Climate change Policies (Caselles *et al* 2009). The OECC undertook a project that consolidates the latest findings around sectoral impact (2003-5) – providing the basis for the PNACC. After undertaking a round of consultations and approvals, formal approval for the PNACC was provided by the Council of Ministers in October 2006.

Focusing on both social and physical vulnerability, PNACC is effectively intended to mainstream adaptation actions into planning strategies (current and future). Such mainstreaming includes the provision of support and capacity building for organizations to develop adaptive capacity. The PNACC deals with a range of sectors, including agriculture, water resources, forests, biodiversity, the coastal zones, mountainous areas and urban planning/infrastructure. Significantly, tourism, transport and energy/industry are further focused upon – providing an excellent example for other adaptation strategies.

PNACC further includes a clear focus on cross sectoral coordination between these sectors, and has a clear designation of mandates and lines of responsibility. Prioritization of sectors has further occurred, as the First PNACC Working Programme has focused on the vulnerable sectors of water resources, biodiversity and coastal areas (Caselles *et al* 2009). Such a focus has included support for targeted research on climate change impacts on these sectors, analyzing, for example, climate change impacts on the Spanish hydrological system –but further developing regulations to amend Environmental Impact Assessments (EIAs) in the light of such findings.

The PNACC Second Working Programme began in 2009, and has expanded its sectoral focus to include tourism, health, agriculture, forestry, soils and infrastructure. In Spain's 5<sup>th</sup> National Communication (2009), many of these strategies are summarized, including the continuation of the 'strategic lines against climate change'; and the extent to which these may have co-benefits with adaptation. The Network of Spanish Cities Against Climate Change', for example, effectively focuses on the integration of climate change planning into municipal policies, with a further focus on synergies between adaptation and mitigation.

As a further example, a range of strategies are being developed for the agricultural sector in Spain, and are being further supported. Such strategies include a priority focus on revised scheduling for irrigated agriculture, support for the *in situ* conservation of genetic diversity in agriculture as an adaptive strategy, and improved support for modelling climate projection-yield relationships with a view to understanding possible future shifts in crop suitability areas.

## 6. *South Africa*

Lastly, South Africa provides a critical point of comparison for the development of a National Climate Change Response Strategy for Mozambique due to its proximity, shared coastline, and, under certain circumstances, comparable sectors. South Africa's Initial National Communication was presented in 2000, paving the way for a series of government oriented actions around response to climate change, headed by the then Department of Environmental Affairs and Tourism (now the Department of Environmental Affairs within the Ministry of Water and Environmental Affairs). After the development of a Climate Change Research and Development Plan, with multiple stakeholder input, South Africa undertook a National Climate Change Summit in 2005; followed by the initiation of the Second National Communication on Climate Change in 2008, and a second National Climate Change Summit in early 2009.

Several processes have occurred simultaneously in South Africa; with reporting provided to the Intergovernmental Committee on Climate Change, and the National Committee on Climate Change. The findings of the Second National Communication on Climate Change were intended to underpin the development of a Green Paper on National Climate Change Response in 2010. However, delays in the production of the Second National Communication, as well as pressures for the Copenhagen, Cancun and (in 2011) Durban COPs meant that the preparation of the two documents has occurred together. Both have recently been made available on the Department of Environmental Affairs website for public comment.

South Africa's Second National Communication (Department of Environmental Affairs 2010a) was headed up by the South African National Biodiversity Institute, and comprises a very detailed 260 page document, including regional climate change projections, national circumstances, sectoral chapters (including agriculture, water, health, human settlements and disaster management, biodiversity, the coastal/marine sector, forestry and rangelands); the latest greenhouse gas inventory, recommendations around education and awareness, and recommendations around monitoring and technology transfer. Longer versions of the chapters are currently being held; and may be available online as part of the longer consultation process around the document.

Key findings from the Second National Communication are that temperature rises are indicated for all parts of South Africa and for all seasons, with about a 1 ° C increase a consensus for the coastal areas, and 3 ° C for inland. Rainfall projections are particularly concerning for the winter rainfall region (including the Western Cape), where most models project diminished winter rainfall and/or a shortening and shifting of the season. Key sectoral findings of concern include projected hydroclimatic changes, in a country already highly water stressed, temperature and rainfall effects on niche and staple grain crops, projected changes for the forestry sectors, possible implications for disaster management arising out of likely increases in the frequency of extreme events; critical impacts on biodiversity; and direct and indirect impacts on human health, including heat stress and possible impacts on vector-borne diseases.

South Africa's National Climate Change Response Green Paper partly (although not entirely – see above comment on the process) draws on these findings ; and outlines "...the government's vision for an effective climate change response and the long-term transition to a climate resilient, low-carbon economy and society" (Department of Environmental Affairs 2010b, pg 5). The response strategy undertaken sector prioritization in that immediate threats to the well-being of South Africans are seen in the resilience of the water, agriculture and health sectors. As a result, these sectors are prioritized for short to medium term intervention – effectively representing the areas where the most benefits may be derived for investment in the short-medium term (not unlike the Australian process). Referred to as 'Key Adaptation Sectors', proposed responses are outlined for each, linked to the sectoral plans each climate sensitive sector is currently being asked to develop. Remaining sectors regarded as 'significant' are disaster risk management, the national resources sectors (including terrestrial and marine biodiversity, commercial forestry and fisheries); and human, society livelihoods and services (including human settlements, infrastructure and the built environment, education, the banking and insurance sectors, rural livelihoods and waste).

In the case of the water sector, the response strategy explicitly recognized that South Africa is already a water stressed country, long before climate change is taken into account. Climate change projections, in many areas, are likely to exacerbate adverse impacts in water supply and quality. South Africa has existing institutional arrangements for water management, and the Green Paper recommends re-orienting existing institutional arrangements to improve water management, in the light of such changes. A number of proposed interventions include the capacity development of existing catchment management agencies (a most challenging area), and the optimization of the use of wastewater. Significantly, the government also proposed developing a household rainwater harvesting incentive programme (not currently in widespread existence at present).

For the agricultural sector, again, the Green Paper emphasizes capacitating, supporting and re-orienting existing sector strategies and policy to better respond to climate change. Specific interventions include, as a particular priority, a focus on the use of water; since agriculture is the largest national water user for irrigation. Further interventions include increased research attention to pests and diseases, since a range of pests and pathogens affecting agriculture (including staple crops, high value vegetables and livestock) may do well in higher temperatures. A specific programme to investigate short, medium and long term adaptation scenarios for the agricultural sector is proposed, likely to be led by the Department of Agriculture, Fisheries and Forestry – harmonized with their sectoral strategy plan under development.

Lastly, adaptations for the human health sector consider both direct and indirect impacts of climate change on health, including what is called ‘the complex disease burden’ – where HIV is often complicated by the presence of waterborne and/or chronic respiratory disease. It is essential to root any consideration of health sector adaptation in this context, and it is laudable that the Green Paper does it right at the start. Proposed interventions thus include re-orientation and enablement of existing health strategies and policies, including emphasis that sound nutritional policies, health care infrastructure and education root any proposed health adaptation strategies (on the understanding that many of these are actions that in any case need to be undertaken to build a more resilience health sector). Further specific interventions include public awareness campaigns on heat stress risk, and, interestingly, the design and implementation of ‘Heat-Health’ action plans (including emergency medical support). A further essential action, and one that is clearly prioritized in South Africa’s Second National Communication, is the strengthening of the information and knowledge of climate-health relationships (this was an evident gap in the preparation of the health chapter, and provided authors with a significant challenge). As a key point here is the strengthening of the national health surveillance

system (as in the case of Jordan), possibly linked to the Health Theme of the Risk and Vulnerability Atlas, currently under design.

In the further sectors considered significant for adaptation; interventions include again, an emphasis that, for the biodiversity sector, for example, existing strategies and policies (which for this sector are fairly detailed) can simply be re-oriented, where necessary, to both take projected climate change impacts into account, and to encourage biodiversity protection as an adaptation strategy in and of itself (similar to approach in Mexico, and to the approach for the coastal zone in the case of Egypt above, for example). For example, South Africa's National Spatial Biodiversity Assessment 2011, currently in finalization, specifically includes a climate change programme, and a recommendation for future protected areas where climate change resilience contribution is one of the criteria taken into account.

For the Disaster Risk Management sector, both short term and long term interventions are proposed; including the improved capacity of early warning and emergency response in South Africa (obviously a component of current risk and resilience activities in any case). A number of coastal areas and cities, as a further example, are revising their set back lines in the light of storm surge inundation superimposed on sea level rise projections – strategies that are targeted for further support by the Green Paper.

As mentioned earlier, South Africa's Green Paper on Climate Change Response is, at the time of writing, available in draft form for public comment. As further actions, the government will cost the response, with a view to undertaking this by March 2011, in time for a third Climate Change Summit. The government will further, after establishing an Inter-Ministerial Committee on Climate Change to have oversight over all aspects of response strategy implementation, consider the establishment of a National Climate Change Fund that will harmonize resources for adaptation and mitigation, and establish a Climate finance Tracking Facility (that will hopefully include monitoring and evaluation). Partnership with the Development Bank of South Africa is considered critical here. Provincial and local government co-operation is considered critical here, although the strategy is fairly brief in recommendation how this might be done.

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