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Current practice and lessons learned from the Africa Adaptation Programme

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Data and information Management Expert

UNFCCC expert meeting on assessing the risk of loss and damage associated with the adverse effects of climate change

26–28 March 2012, Tokyo, Japan

Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa

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Content

- Background – Extreme climatic events and Africa's sustainable development
- Innovative approaches to dynamic, long-term adaptation planning and decision making mechanisms - African Adaptation Programme
- AAP e-infrastructure - HPC, data, decision support tools and methods and network of institutions
- Example application of DSS to multi-sectoral adaptation planning in Kenya
- Summary and conclusion

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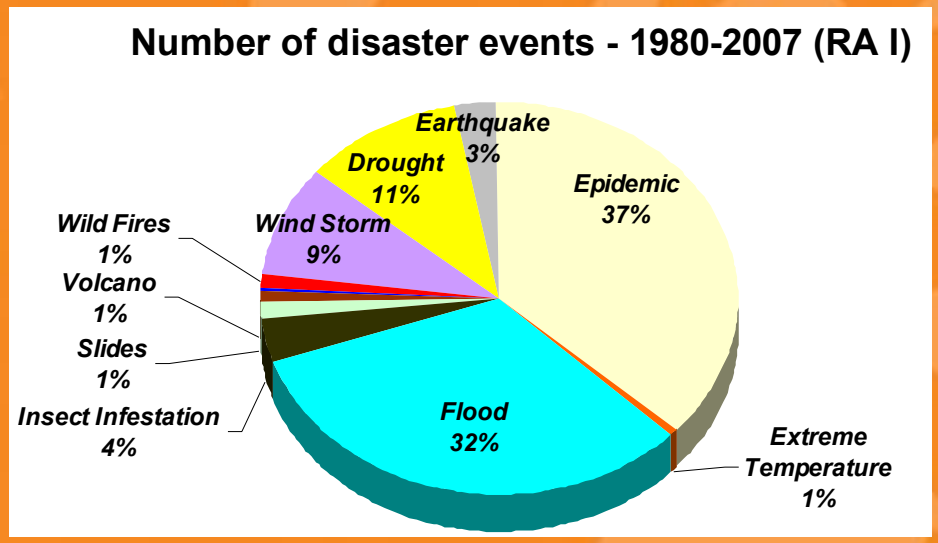
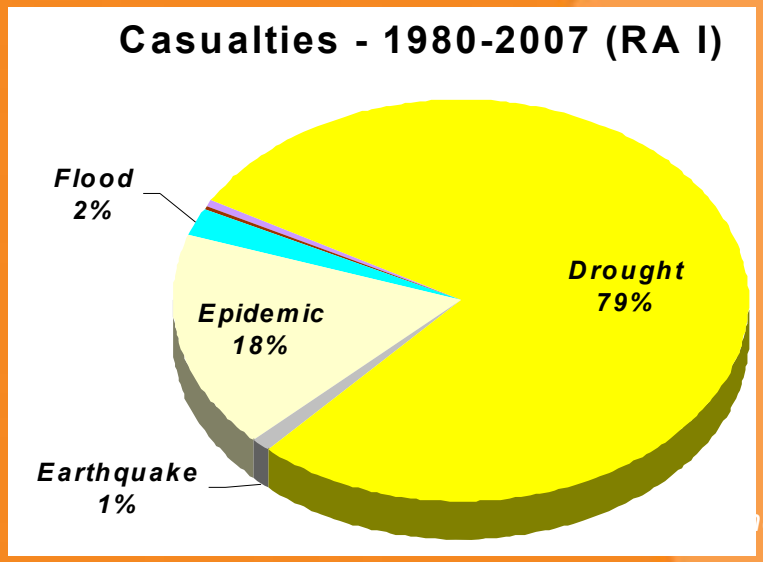
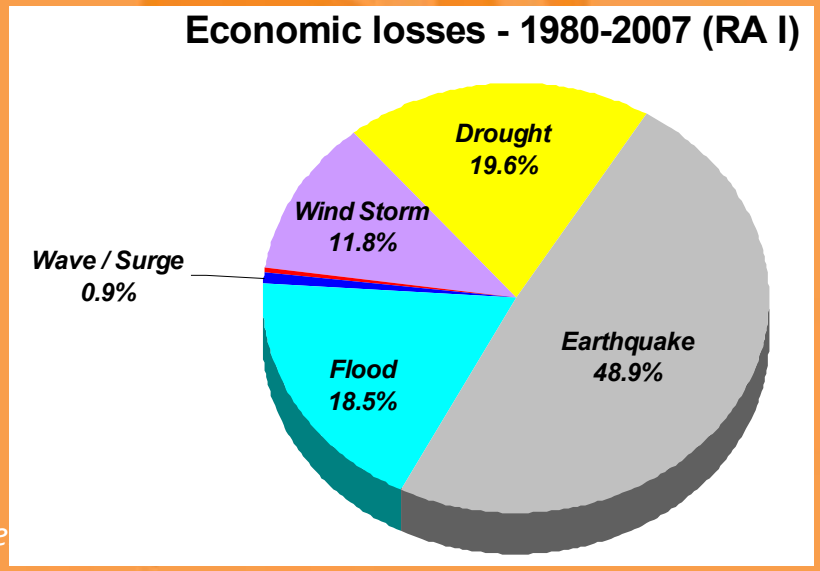
Disasters Caused by Natural Hazards and their Impacts in Africa (1980-2007)



96 % of events
99 % of casualties
50 % of economic losses

are related to hydro-meteorological hazards and conditions.





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Climate Products and Services for Adaptation Planning

Short to medium term weather forecasts	Seasonal to inter-annual climate forecasts	Decadal climate trend analysis	Climate change scenarios
Next hour to 10 days	Season to year	Decade	Long term climate change
✓Short-term planning ✓ Emergency Preparedness	✓Medium-term operational planning ✓Risk assessment and management	✓Long-term strategic planning ✓Infrastructures planning, retrofitting ✓Land zoning	✓International negotiations with national policy implications

Decision-making Timelines

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Challenges to Delivery of Climate Products & Services to Support National Development

- Over 88 % of NMHS in Africa, are challenged in delivering climate products and services to support DRR
- 92% lack appropriate application software
- 96% need upgrading of operational infrastructure to support DRR
- 92% need technical training on production of climate products and services
- 85% say lack of effective co-ordination with other agencies involved in DRR impacts negatively on operations

Source: 2006 WMO Country-level DRR survey

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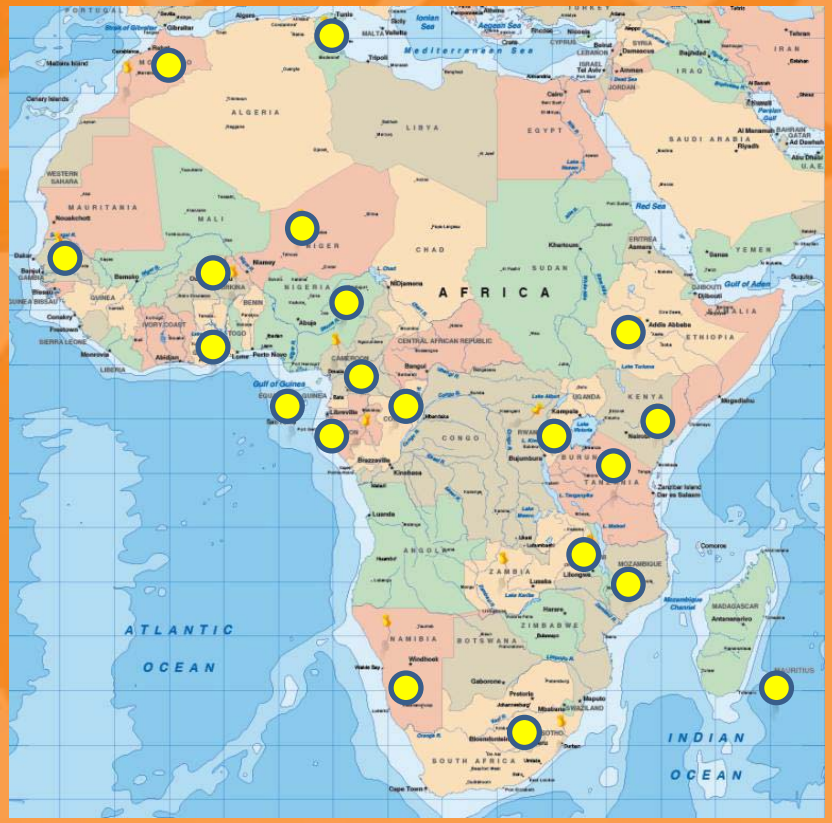
- **Government of Japan funding**
- **Projects running in 20 countries**
- **$92m over three years 2009-12**

Burkina Faso	Morocco
Cameroon	Mozambique
Congo	Namibia
Ethiopia	Niger
Gabon	Nigeria
Ghana	Rwanda
Kenya	Sao Tome
Lesotho	Senegal
Malawi	Tanzania
Mauritius	Tunisia



Regional team in Dakar, Senegal
Satellite office in Nairobi

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Africa Adaptation Programme Outcomes

Country Projects have been designed to achieve ….

- ***Strengthening long term planning to enable countries to manage both existing and future risks associated with climate change and other causes***
- ***Building effective leadership and institutional frameworks for enhanced coordination and cohesion of programmes***
- ***Supporting the piloting of adaptation initiatives in the field***
- ***Identifying a range of financing options for sustained adaptation***
- ***Building knowledge management systems and promoting information sharing.***

Planned activities to ensure that inter-regional expertise and capacity development is provided to 20 countries including.....

- ✓ ***Advice and assistance relating to enhanced Government policy-making and planning in this field***
- ✓ ***Support for leadership development and institutional reform as well as enabling individual development***
- ✓ ***Encouraging exposure to world best practice and data***
- ✓ ***Support in finding innovative funding options***
- ✓ ***Creation of region-wide databases and learning opportunities***

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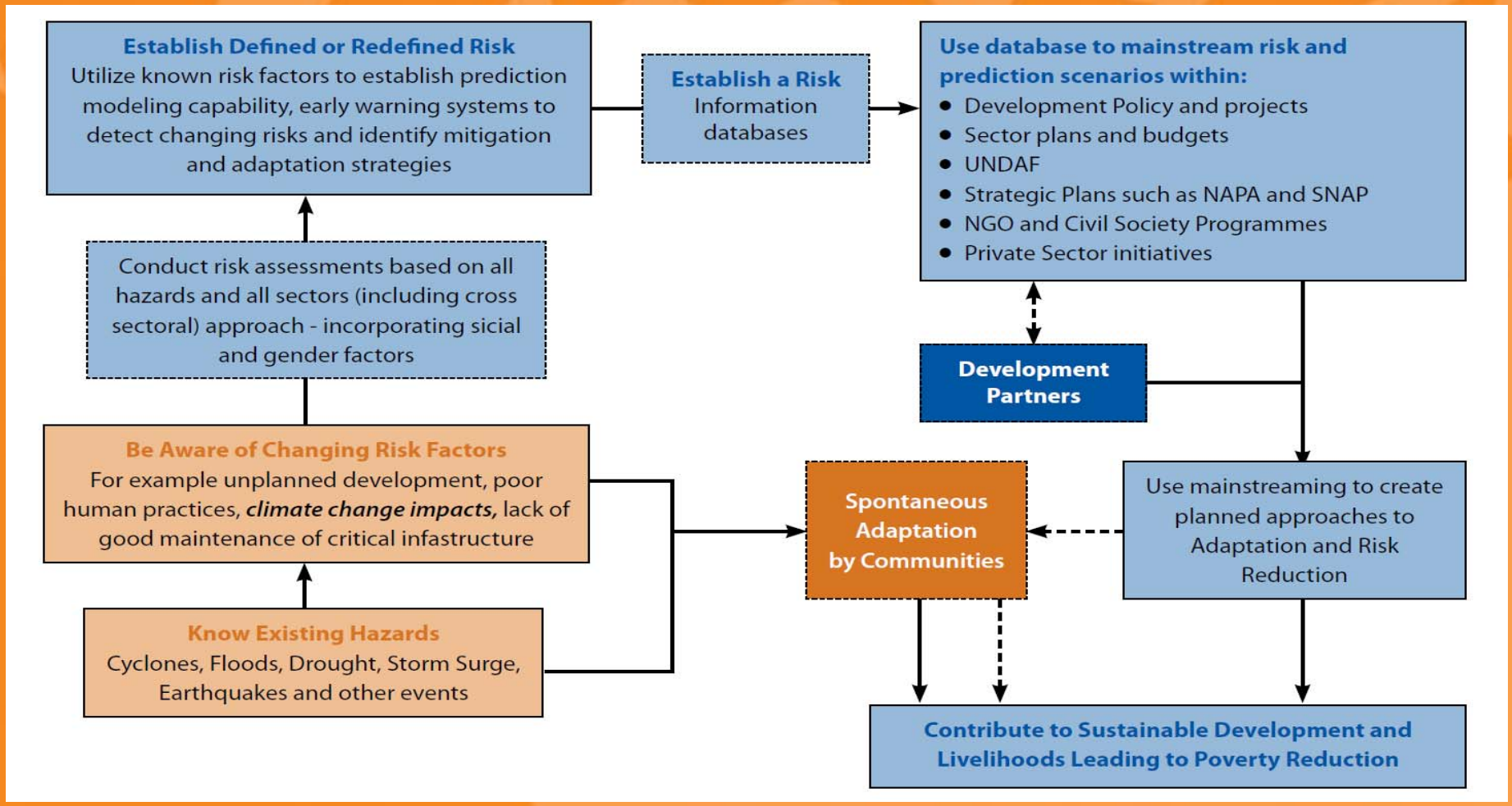
Conceptual Design of AAP



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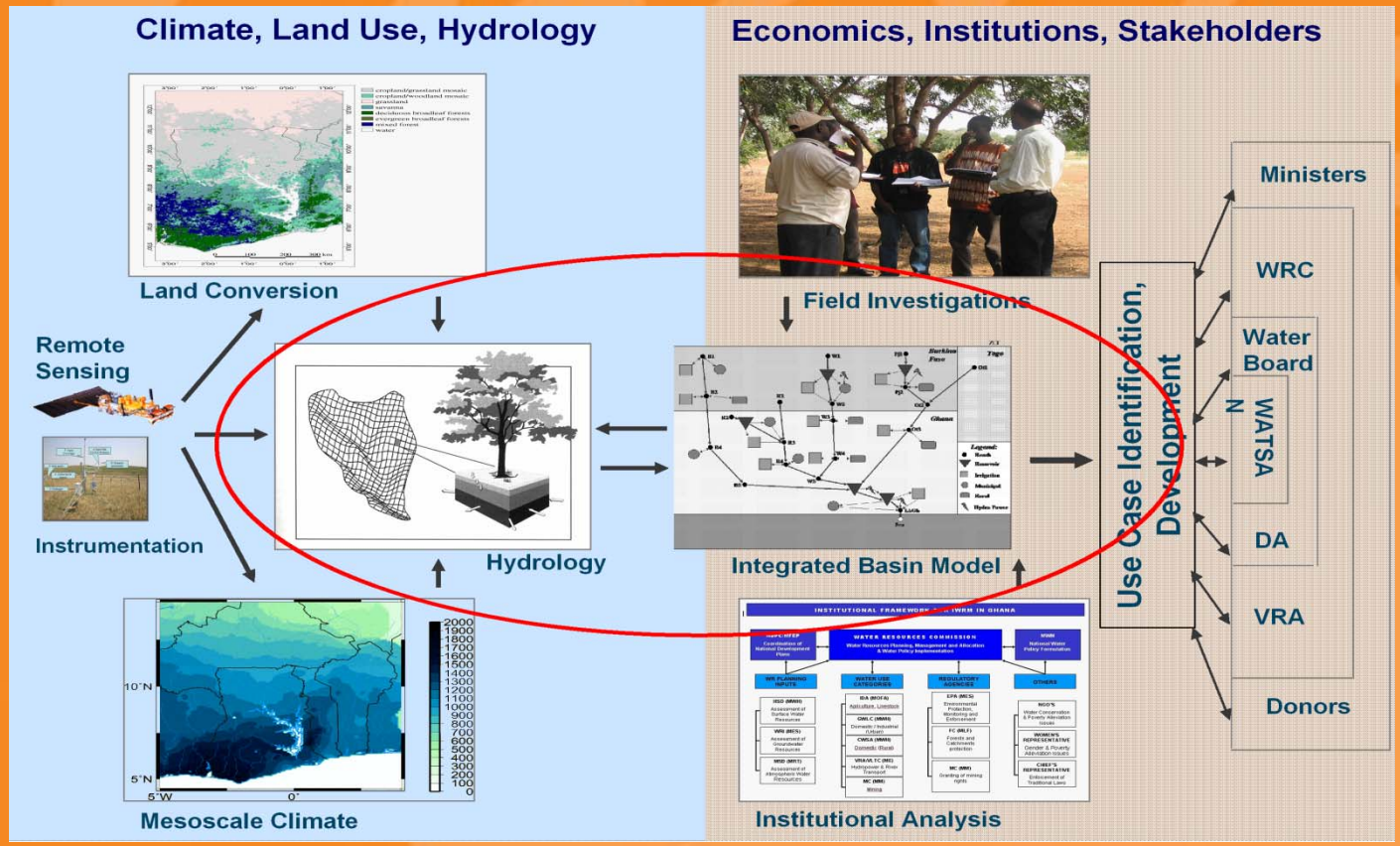
Integrated and Comprehensive Framework



Multi-disciplinary, multi-sectoral participatory action

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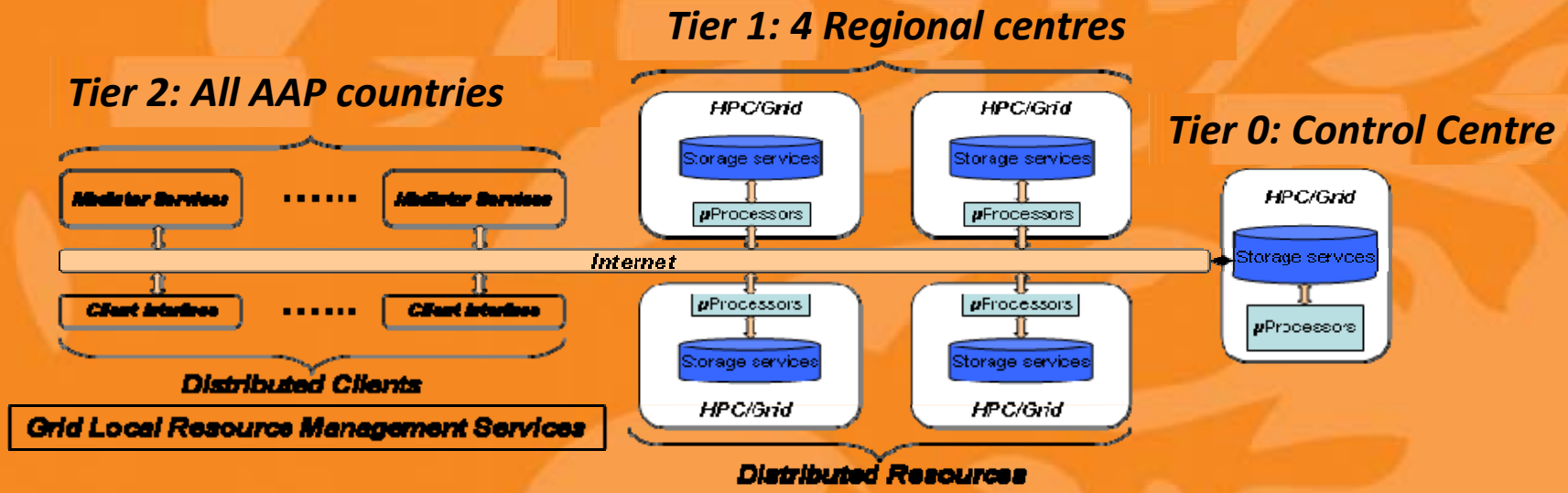
AAP E-infrastructure (HPC, data, decision support tools & network of institutions)



1. Tier 0: A central computer that is large enough to host considerable amount of data (potentially at ICTP)
2. Tier 1: Consist of four African Regional Centres and it will be large enough to guarantee that combined data created and stored is similar to Tier 0.
3. Tier 2: Consist of all AAP Countries that will access the infrastructure by means of an of internet - web interface.

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Decision Support & Planning Tools

- Int. Water Resources Management – CORDEX/SWAT/WEAP
- Int. Coastal Zone Management – CMIP5/DIVA
- Multi-Sectoral Planning - Systems Dynamic Model/T21
- Weather Index Insurance – Agric DSS & Agromet stations
- Data & Information Management – RAMMADA/TDS & IDV
- Climate Analysis – R-Stats, RClimdex, IDV and FAO LoClim
- Climate Modeling – HPC, CORDEX models, Linux Platform
- Hazard Mapping/Floods – GeoSFM, NSFM

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Application of systems dynamic modeling (T21) in Kenya

Strengthening Institutional Capacity for Integrated Climate Change Adaptation & Comprehensive National Development Planning in Kenya:

- Threshold 21 (T21) is a System Dynamics based model designed to support national development planning.
- Structured to analyze medium-long term development issues at the national level.
- Integrates in a single framework, the economic, the social, and the environmental aspects of development.
- Serve as a complement to budgetary models and other short-medium term planning tools by providing a comprehensive and long-term perspective on development.

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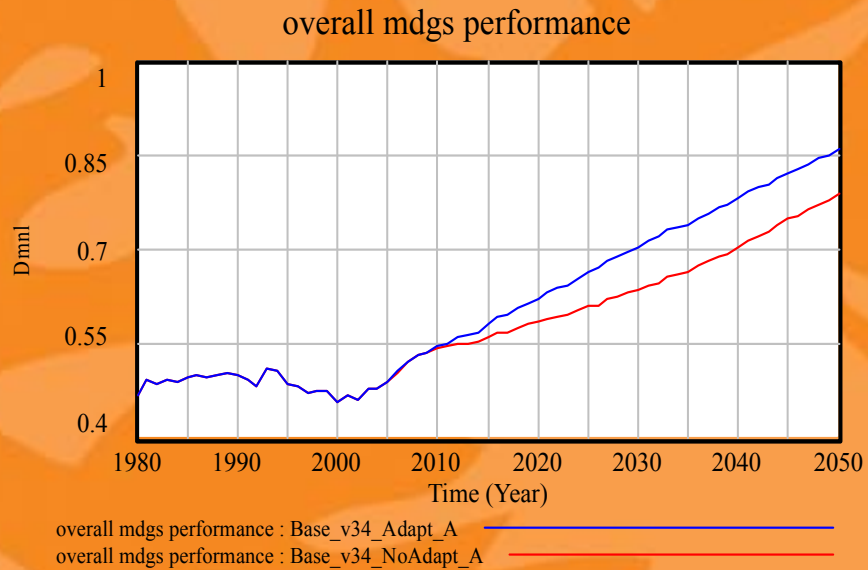
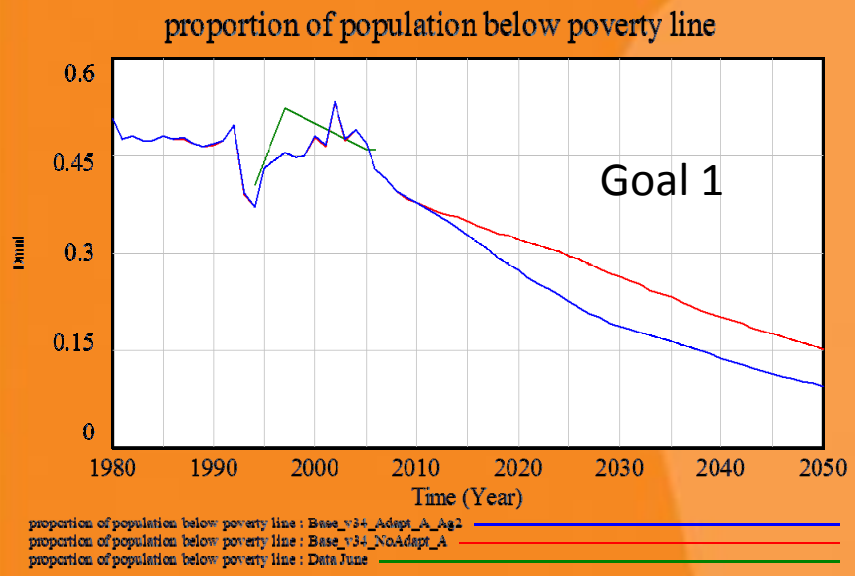
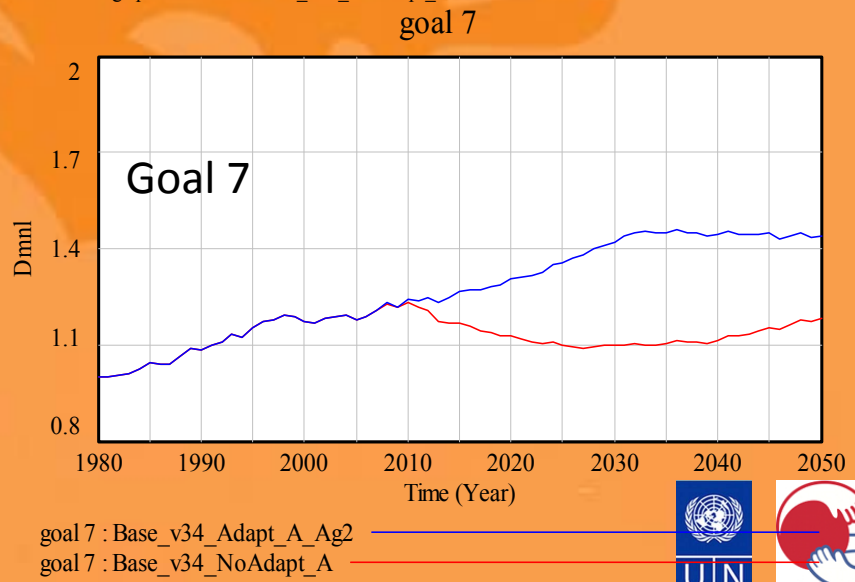
Key Results - MDGs

- **BAU economic growth of about 3.76% per year on average between 2010 and 2050.**
- **All other sectors were calibrated as a consequence of this main assumption.**
- **As a result of economic growth, and the proportion of people living below the poverty line will decline 18.50% in 2035.**







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Summary and Conclusion

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Established and strengthened strategic networks

- Built/strengthened network at different levels:
  - in-country linkages between climate products and services providers, policy/decision makers and end-users
  - strategic networks with key African regional centres (ACMAD, AGRHYMET, ICPAC and SADC-DMC) and International Climate Centres (UK Hadley, Earth Simulator, etc)
  - strategic networks with key international institutions (WMO, UNFCCC, WFP, ACPC, IGAD, ECOWAS, UNEP, IFRC, ICTP, etc).

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In-country technical assistance - mentoring, trouble shooting and advisory services

Developed a Helpdesk to enable rapid response to problem resolution – established a local network of problem-solvers, mentors and advisors.

In-country technical support for:

- services on data and information management: data collection, analysis, e-infrastructure, tools and methods.
- procurement, use and management of early warning systems and decision support tools.

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Capacity Development Activities

- Held 4 in-country workshops in Lesotho, Burkina Faso, Kenya and Ghana during 2011.
- Extensive post-workshop in-country support to all AAP countries;
- 137 people trained at the 4 regional workshops. 12 participants have been trained at the ICTP workshop in 2012.
- 126 people trained at the in-country workshops in 2011. in 2012, 15 additional people trained in-country Burkina.
- 24 people trained in Africa-wide CORDEX-Africa workshop
- A Community of Practice (COP) of 15 multidisciplinary members climate products and services workshop.
- A COP of 30 multidisciplinary members from different countries established during the two AAP-ICTP e-infrastructure workshops.

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Key Challenges & Solutions

- Significant challenges exist in building capacity to manage climate related loss and damage in Africa
- Most countries still lack basic project management and operational capabilities. Institutional/organizational effectiveness is critical for project implementation but few projects take into account the scale of local challenges – e.g. institutional challenges
- Integrated and comprehensive approaches that take into account the bio-physical and socio-economic context of CC will provide holistic/optimal solutions
- Use of practical in-expensive emerging technologies is key to addressing the problem in Africa – e.g. e-infrastructure
- High level engagement is key to unblocking barriers to successful project implementation & ensuring sustainability

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