

Resilience Needs in NATO Partner Countries, Global and African Future Earth

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Abstract

Research now demonstrates that the continued functioning of the Earth System, as it has supported the well-being of the human civilization in recent centuries, is at risk. Resilience is thus needed in NATO Partner Countries on national, regional, and global dimensions.

Global Future Earth as an international scientific community, under the umbrella of the International Council of Science Union (ICSU), is responsible to help modify the Earth System to avoid future risks. The purpose of the Africa Future Earth Committee (AFEC) is to be an effective advocate for Future Earth (FE) in Africa, as well as for African interests in the global Future Earth platform. Resilience needs in Future Earth community is very important to avoid the present and future disaster risks, especially in Africa with poor facilities of infrastructure.

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21.1 Resilience Needs

21.1.1 Resilience Needs – National Dimensions

The Egyptian population is growing quickly, now approaching 100 million individuals. The effects of an increasing population present a threat to the current infrastructure. Resilience is needed for critical infrastructure safeguarding, especially to areas with an international dimension like the Suez Canal. There is currently a special Early Warning Group working to manage and facilitate the solution before, during and after any disaster risk, with the help of the Egyptian military. The High Dam in Aswan is one of the most important infrastructures, and as its safeguarding is so important for Egypt, there is a special research institute on site working to improve its situation and study the expected disasters (Egyptian Environmental Affair Agency (EEAA) [2009](#)).

21.1.2 Resilience Needs in NATO Partner Countries – Regional Dimensions

The needs to implement resilience in NATO Partner Countries include the following items of resilience:

- A resilient system for exchanging information between Partner Countries in the field of terrorism and sabotage.
- Common strategies for NATO Partner Countries in regard to critical infrastructure.
- Initiate a Technical Support Working Group.
- Establish an early warning unit.
- A method for exchanging experience to reduce the risk of disasters in critical infrastructure due to inexperience and the misuse during operating.
- Establish a scientific system for predicting the risks to critical infrastructure.
- Work to avoid and reduce risks of natural disasters to critical infrastructure, by providing enough information about natural disasters, and encouraging cooperation with Partner Countries to facilitate a fast transition during disasters.
- Reduce the misuse or the excessive use of critical infrastructure's abilities.

21.1.3 Resilience Needs in NATO Partner Countries – Global Dimensions

Partner countries need to reduce industrial pollution, especially those due to car emissions, which raise a huge risk to critical infrastructure. Controlling population explosion is also of the utmost importance. Improving the standard of living around the world is a further step in the same direction.

Life on earth is a monumental and essential task that must be preserved and developed constantly. Preserving the earth improve the quality of human life is Partner Countries main target.

21.2 Global Future Earth (FE)

“Planet under Pressure” Conference (London, March 2012) produced the “Planet Declaration” in response to current research showing that continued functioning of the Earth System is at risk. Current state is doing damage to the socio-economic trends which comprise: world population, urban population, large dams, foreign direct investment, primary energy use, fertilizers consumption, water use, paper production, transportation, telecommunications and international tourism (<http://www.futureearth.org> (<http://www.futureearth.org>)).

Earth System Trends: Carbon dioxide – nitrous oxide – methane – coastal nitrogen – surface temperature – marine fish capture – ocean acidification – shrimp and fish aquaculture – tropical forest loss – domesticated land – terrestrial degradation.

Future Earth is a research platform for the anthropogenic sources and research for global sustainability (<http://www.futureearth.org> (<http://www.futureearth.org>)). About 50,000 sustainability researchers, from more than 30 countries, are working together on finding solutions to the planet’s most pressing challenges. Resilience needs in Future Earth researches is very important to avoid the present and future disaster risks.

21.2.1 The Future Earth Challenges Are

(a) To unite around a common research agenda for global sustainability science; (b) to engage societies in new ways; (c) and to encourage, catalyze and synthesize high quality research to support transformation.

Future Earth addresses these challenges by: (a) Building global communities of practice around key themes in sustainability; (a) Promoting research that informs solutions to real problems around the world; (c) And bringing together researchers, policy experts, businesses, and leaders in civil society and more.

21.2.2 Future Earth Networks Are

Global in scope but designed to inspire transformations at the local level; responsive to the needs of societies around the world; and co-designed and co-produced with the people who will use the results of our research.

- **Natural Assets:** Manages natural assets to preserve human well-being and biodiversity.
- **Oceans:** Addresses the most pressing challenges to ocean sustainability through solutions-oriented research.
- **Water-Energy-Food:** Explores the interactions between water, energy and food, and how these relationships are shaped by environmental and social changes.
- **Finance & Economics:** Supports strategies for linking economic prosperity with social justice and a healthy planet.
- **Health:** Promotes research for a better understanding of the relationships between changing environments and human health.
- **Cities:** Contributes to the transition toward sustainable urban futures where cities are more livable, equitable and resilient.

21.2.3 Sustainable Development Goals

Most important is to promote high-quality scientific research as a tool and approach for achieving the Sustainable Development Goals (SDGs). To co-organized workshops held by SDGs in 2015, 2016 established an organizing committee for 2017 Conference on the Anthropogenic SDGs, in partnership with GEO and financial support from AGPP.

21.2.4 Importance of Future Earth

Future Earth is part of an international community committed to transformation according to a coordinated research agenda: (a) organizing International conferences to meet and share ideas (physical and virtual); (b) to initiate the Intellectual frameworks for the co-design solutions-based research; (c) route to engage with international policy processes; (d) and international support for media, communications, capacity building, and young scientist career development (Future Earth Booklet [2016](#)).

21.3 African Future Earth Committee (AFEC)

The African Future Earth Committee (AFEC) was established in 2015 to be an effective advocate and advisor for Global Future Earth community in Africa. The purpose of this committee to be encourage the research for global sustainability in Africa and scientific advisor for African Union (AU), and as an effective advisor for African interests in the global Future Earth platform (<http://www.icsu.org/icsu-africa/about-icsu-roa/about-us/african-future-earth-committee> (<http://www.icsu.org/icsu-africa/about-icsu-roa/about-us/african-future-earth-committee>)).

The AFEC has two main responsibilities. Firstly, they are responsible for the formulation of a regional strategy for short -, medium -, and long - term deliverables on activities in various domains including capacity building, research, practice, infrastructure, and others. Secondly, they are charged with the development of a comprehensive concept note for Future Earth in Africa that will be submitted to the African Union and other inter-governmental bodies to get buy-in for the Future Earth framework at national, sub-regional and continental levels.

AFEC will initiate National committee all over African country to be the representative of FE and AFEC locally. The resilience needs in African future researches will help the continent in infrastructure safeguarding, modify its abilities and create suggestions of future modifications.

21.3.1 AFEC's Roles and Responsibilities

Resilience will be integrated with African Future Earth responsibilities for the suggested future research in African counties, and lead new ideas for dramatic changes according to the following lines:

- Raising awareness of Future Earth agendas, activities and opportunities in African science, policy and practice bodies, at national, regional and continental levels;
- Keeping up to date with Future Earth science and engagement agendas, activities, programmes and other relevant information;
- Consulting with relevant African science, policy, practice bodies on African interests and priorities for the global Future Earth, and ensuring these priorities within the global Future Earth agenda and activities;
- Work with the global Future Earth Platform to oversee the establishment of the African Future Earth Center(s) that will act as secretariat and manage African Future Earth activities;
- Work with the African Future Earth Centre to plan and implement African Future Earth activities;
- Formulate a regional strategy for short-, medium-, and long-term deliverables on activities in various domains including capacity building, research, practice, infrastructure, and others;
- Develop a comprehensive concept note for Future Earth in Africa that will be submitted to the African Union as well as to other intergovernmental bodies.

21.3.2 The Tasks of AFEC

21.3.2.1 The AFEC's Agreement

AFEC's strong agreement that an African science agenda must be predicated on African science and developmental contexts include: (a) inter-phasing in the African 50-Year Strategic Science Agenda (Agenda-2063), with the Global Future Earth programme; (b) obtaining funding support for public engagement and co-creation of an agenda, sensitization and mobilization for Future Earth programmes in Africa; (c) and integrating with FE activates in Africa e.g. updates on the developments/activities of Future Earth global and regional level at offices initiated recently in Africa.

21.3.2.2 Developing FE in Africa (2016–2025)

The risks in Africa need a lot of efforts and modifications of the present situation in the following fields:

- Education and Health are a key priority in Africa and the AFEC was glad to note that this theme features in the Future Earth global plan;
- Updates on the developments/activities of Future Earth global and regional level at offices were initiated recently in Africa (Pretoria, Kigali, and Bibliotheca Alexandrina as a coordinator office);
- Improve the visibility of Future Earth in Africa according to the recent situation. There are weakness and inability to services provided to the African people, especially in education, health, transportation, electricity, paved roads, clean water and other unavailable services.
- Developing a process to articulate key science and other challenges that are of prime interest to Africa to promote an understanding of the African Worldview and in the context of African Development Priorities (current and future).

Sustainability includes the reference to the Sustainable Development Goals and for resilience needs in infrastructure and its development Africa.

The following initial themes have been suggested by AFEC according to (SDGs) roles:

- Natural resource use.
- Understanding the ‘Anthropology’ of African Peoples in transitions.
- Monitoring and evaluation.
- Well-being and life.
- Technology – new and emerging.
- Africa-driven solutions to infectious orphan diseases.
- Investigating and upgrading traditional solutions.
- Regenerative agriculture based on nutrient-dense, African Indigenous crops. With the capacity to restore the soil.
- Population growth.

Notes

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Further Suggested Readings

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