



Japan-Egypt Hydro Network (JE-HydroNet) Joint Project in Science and Technology



Japan Egypt Hydro Network and Risk Reduction Management in Different Transportation Sectors

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EGYPT

Egypt

- International Boundary
- Governorate Boundary
- Buffer Zones/Treaty Lines
- Road
- River
- ★ National Capital
- Governorate Capital
- City or Town

0 50 100 150 KM
0 50 100 150 Miles

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The two biggest disasters in the past decade were:

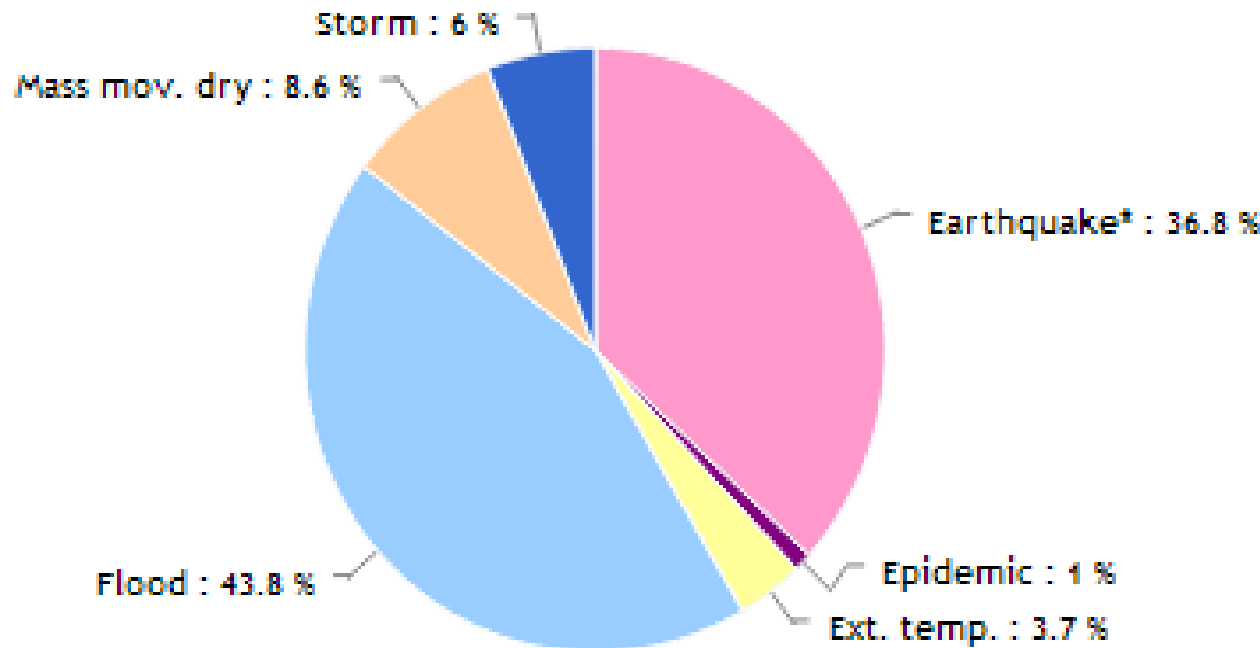
- the earthquake of 1992 and;
- the flash floods that occurred 1994, 2010 in Upper Egypt.

Disasters in Egypt

Top 10 Natural Disasters Reported

Affected People

Disaster	Date	Affected (no. of people)
Flood	1994	160,660
Earthquake*	1992	92,649
Flood	2010	3,500
Flood	1995	3,000
Flood	2002	800
Mass Movement Drv	2008	697
		300
		260
		250
		208



Percentage of reported people killed by disaster type

Roads Disaster Risks

Disaster risk by roads can occur through human and natural disaster

- ✦ Egypt loses about 12 000 lives due to road traffic crashes every year.
- ✦ It has a road traffic fatality rate of 42 deaths per 100 000 population.
- ✦ Majority (48%) of those killed are passengers of four-wheelers though pedestrians also constitute 20% of these fatalities.
- ✦ In addition, there is no adequate provision of infrastructure for non-motorized modes of transport.
- ✦ Floods. In Egypt as example we receive once per year high amount of rain specially in South Sinai and in upper Egypt, where thereby the main roads get destroyed and are closed for the traffic for a long time. Policies and strategies with engineering solutions has been done to minimize the disaster risks through such rain showers. But still we need more observation and forecasting for the weather in such areas to avoid any coming destruction for these roads.

Flash Flood Hazard in Egypt in 2010



Damages caused by the 1994 and 2005 flash floods in **Wadi Feiran** area (Environ Earth Sci (2011) 62:611–623/ DOI 10.1007/s12665-010-0551-1)

undercutting of the highway



flood carrying large boulders



cutting under the palm tree oasis



JE-HydroNet BACKGROUND

- The gap between education, research and practice in the hydraulics and hydrology field is recognized by many;
- Bridging the gap can be achieved by involving the practitioners in education and training;
- Engineering projects are becoming more complex projects and have to be carried out by several experts of different disciplines and locations;
- ⊕ A joint project for research and education was established between DPRI, Kyoto University and three institutional research units in Egypt.
- ⊕ 2010 DPRI, Kyoto University initiated **Japan Egypt-Hydro Network (JE-HydroNet)**;
- ⊕ The Second JE-HydroNet Symposium was at **GUC**, Egypt 20-21 March 2012;
- ⊕ This network was developed from the problems facing the Nile Delta, Nile River system, and coastal managements in Egypt;





MODERN METHODOLOGIES FOR THE MANAGEMENT, MONITORING
AND PLANNING OF INTEGRATED WATER RESOURCES IN THE NILE RIVER

*Database of JE-
HydroNet
(<http://wrrc.dpri.kyoto-u.ac.jp/database/home.htm>)*



Sustainability/Sustainable Science
for Eastern Sahara Adaptation
to Extreme Weather Conditions

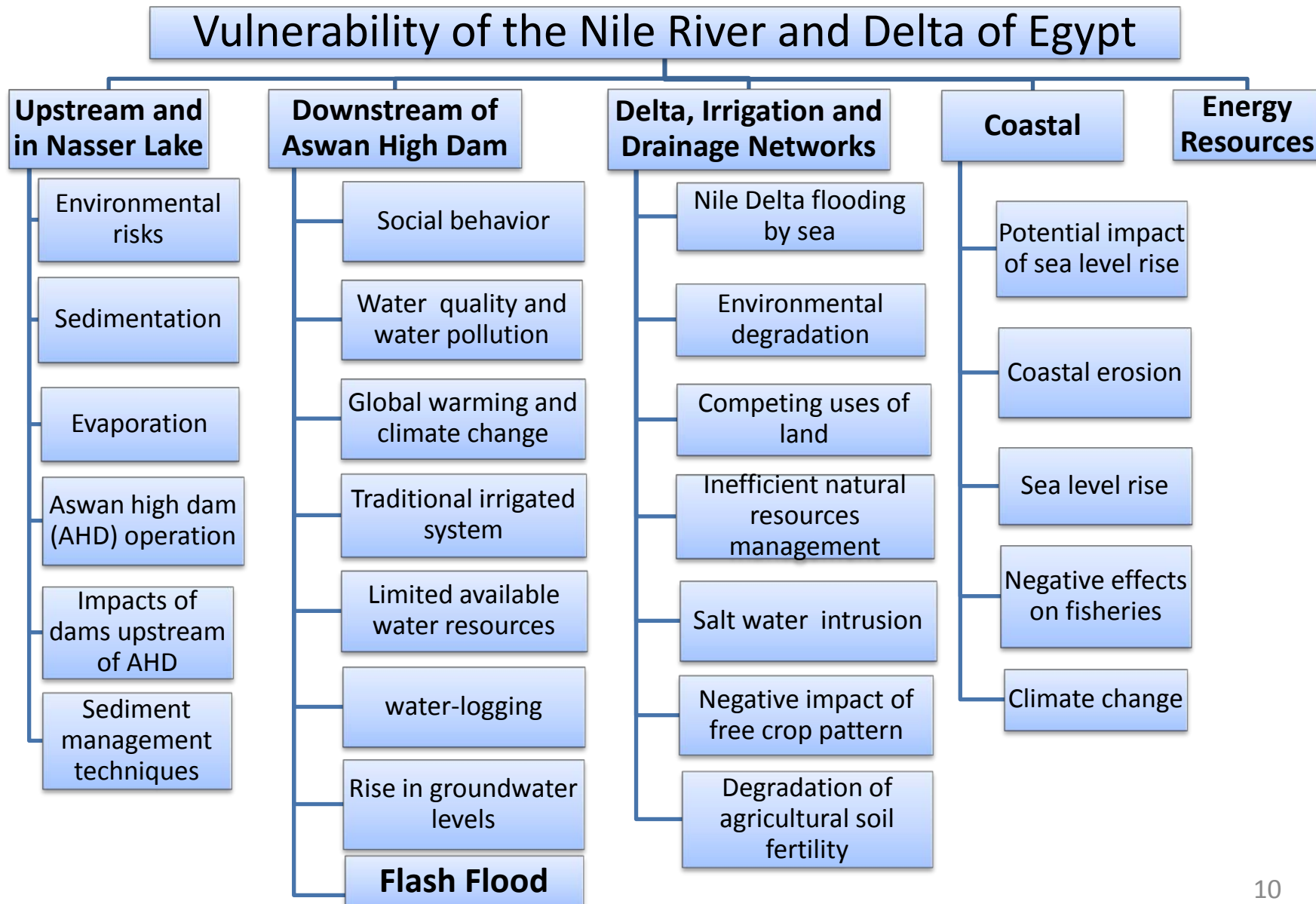


Joint Egyptian Japanese
Scientific Cooperation (JEJSC)



- [Background and Objectives](#)
- [Member](#)
- [Symposium](#)
- [Database \(members only\)](#)
- [Contact](#)

Problems Facing Nile River System and Delta of Egypt





Japan Egypt Hydro Network (JE-HydroNet): Modern Methodologies for the Management, Monitoring and Planning of Integrated Water Resources in Nile Delta



First Mini-Symposium

October 26th (Tuesday), 2010

Salle D1518, Uji campus, Kyoto University

Organized by Water Resources Research Center,
Disaster Prevention Research Institute, Kyoto University



- ✦ Impacts of climate changes on the Nile Basin and the Delta of Egypt
- ✦ Integrated water resources managements including irrigation and ground water
- ✦ Reservoir sustainability management
- ✦ Coastal management
- ✦ Flash flood disaster management

The Second JE-HydroNet Symposium on the Nile River System and the Delta of Egypt

March 20-21, 2012

The German University in Cairo, New Cairo Egypt

The Second JE-HydroNet Symposium on the Nile River System and the Delta of Egypt
March 20-21, 2012

JEHYDRONET: MODERN METHODOLOGIES FOR THE MANAGEMENT, MONITORING
AND PLANNING OF INTEGRATED WATER RESOURCES IN NILE RIVER

المنهجيات الحديثة للإدارة والرصد والتخطيط المتكامل للموارد المائية في نهر النيل

Co-sponsored by:



National Water Research Center, Assiut University, Alexandria University, German University in Cairo Egypt & Disaster Prevention Research Institute, Kyoto University, Japan



**Auguts 2014 JE-HydroNet Seminar for Cemented Sand Gravel (CSG)
Dam Project attendees from Embassy of Japan in Cairo, JICA office,
Ministry of Water resources and GUC
The German University in Cairo, New Cairo Egypt**

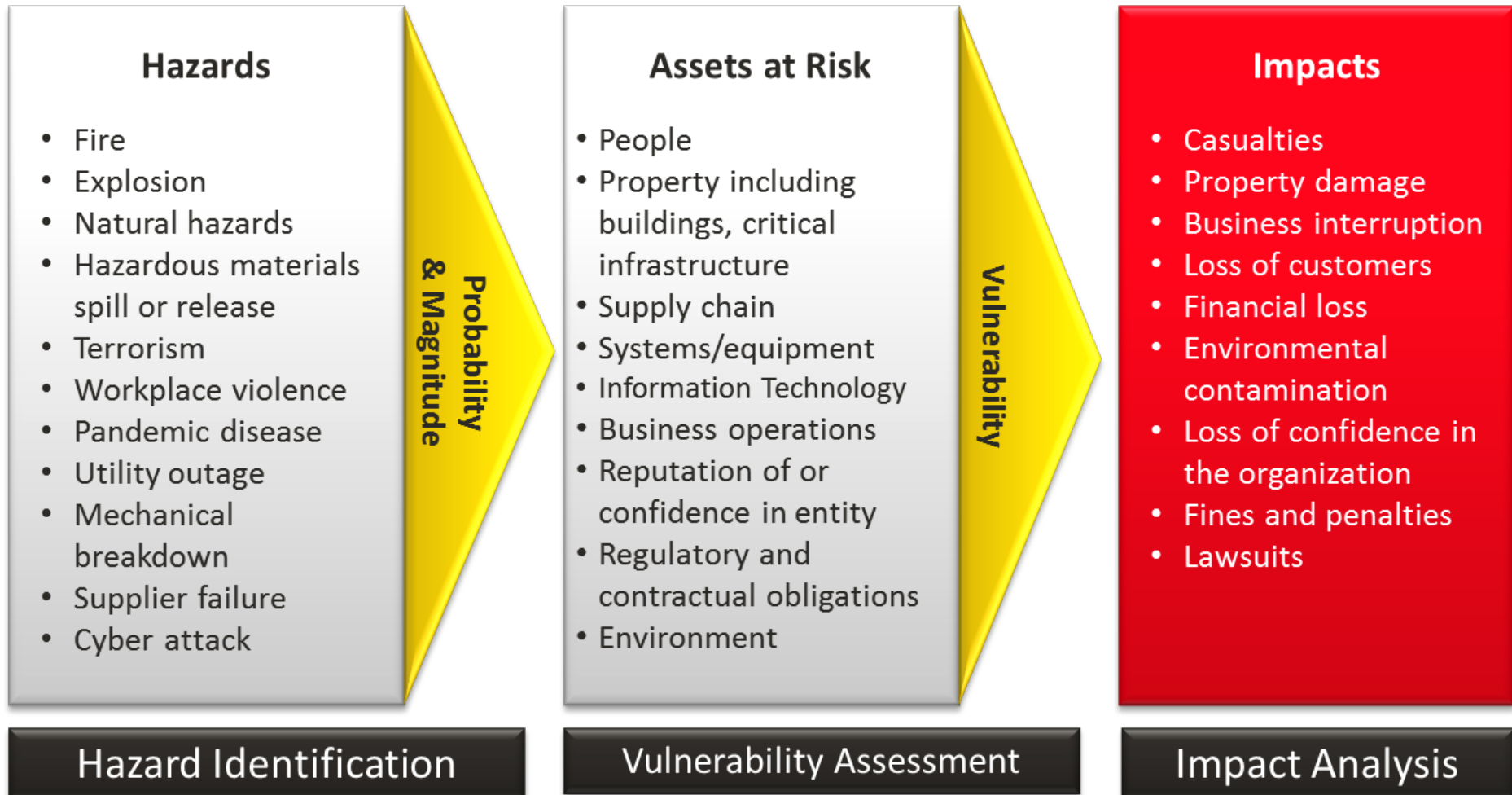


Hazards – Exposure – Vulnerability- Risk

- ❖ **Hazards** is a potentially damaging natural or human induced phenomenon, material, anthropological activities, which may cause loss of life, injury or other health impacts, property damages, loss of livelihood and Socio-Eco disorders.
- ❖ **Exposure** is the degree to which the element at risk are likely to experience hazard events of different magnitude.
- ❖ **Vulnerability** is the characteristics and circumstances of a community, system that make it vulnerable to the damaging impacts of a hazard. This may arise from various physical, social, economic and environmental factors.
- ❖ **Risk** is the combination of probability of an event to happen and its negative consequences

Processes of Risk Reduction Assessment

The impacts from hazards can be reduced by investing in mitigation measures. Creating a mitigation strategy is a high priority for risk reduction.



**Road Safety in
developing
Countries has
been researched
and discussed
from several
researchers and
institutes several
times within the
last century**



Freight Transport in Egypt

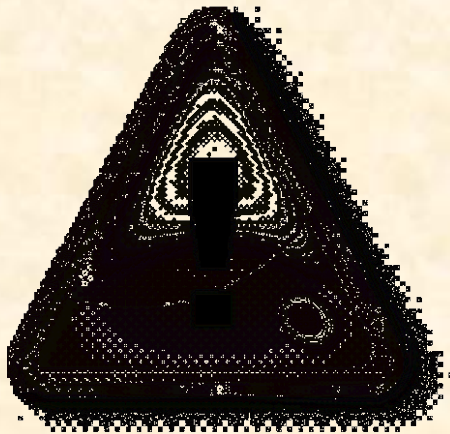
~ One Million Ton/year Freight

95% on Road Transport

4% Railway Share

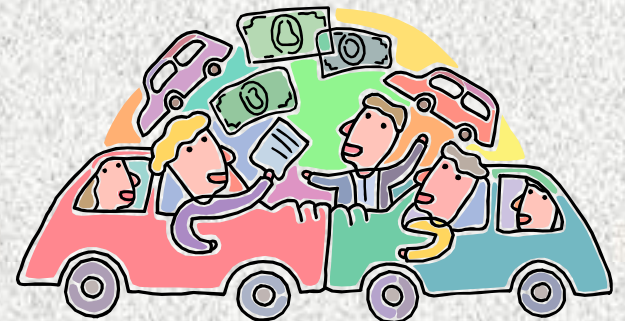
1% River Transport
share

**Looking at these figures it
is obvious that something
is wrong in our Transport
system**





Therefore and due to the high % share of using our road network the number of Accidents increased dramatically in the last years from 8000 mortalities and 30.000 injuries in the year 2000 to 12000 mortalities and 55000 injuries by the end of year 2009.



In Egypt the Freight Transport on the road network with this high % using trucks and trucks with trailer is causing several problems especially in Road Safety. Therefore, the only way is to increase the Rail and River Transport share in Freight Transport.





We have to encourage the use of Mass Transit Public Transport modes with high quality of services and reasonable fees for the different society levels.



In Passenger Transport an integrated network of variety of transit technologies must be implemented to create an effective transportation system.

Different technologies can be appropriate in different areas of the city to serve a range of capacity and service demands.

This is what we call a completed good integrated Transport System

Complete Integrated Transport System needs to be :

User – Focused
Valued and
Seamless



Complete
Integrated
Transport
System

Efficient

Sustainable



This complete Integrated Transport System needs:

- **Real time knowledge of the different transport networks.**
- **Tools to influence behavior.**
- **Proactive management of the different network.**
- **ICT (Information communication Technology) & ITS (Intelligent Transportation System) are fundamental to complete Integrated Transport system.**
- **Strong delivery arrangements are important.**
- **Financial and Funding possibilities to reach objectives.**

Recommendations

Disaster risks must be involved as public concerns in the weighing process of planning on all planning levels:

- Research: – Framework and indicators for risk assessment
 - A definition of standards is needed.
 - Assessment tools and standards have to be integrated in the planning process
- The ability of controlling the urbanisation process is a key competence to shape the future, that must be based on efficient disaster risk reduction by planning

شكراً

ありがとうございます

Thank you for your attention