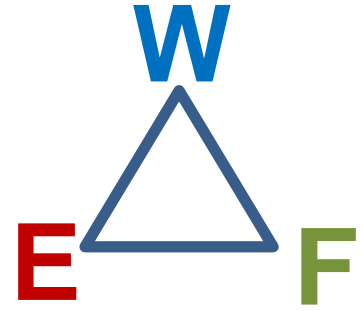


# Water, Energy and Food



Session 5 of the 2<sup>nd</sup> SWAN International Conference

**OPEN KNOWLEDGE:**

**BRIDGING PERSPECTIVES TO ADDRESS WATER CHALLENGES**

Tucson, February 17, 2015

Laszlo G. HAYDE

Sr. Lecturer in Irrigation Engineering

Chair Group Land and Water Development

**UNESCO-IHE**  
Institute for Water Education





Agenda

Reports

Events

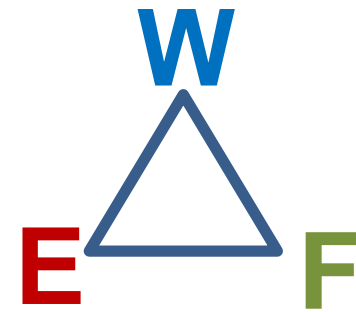
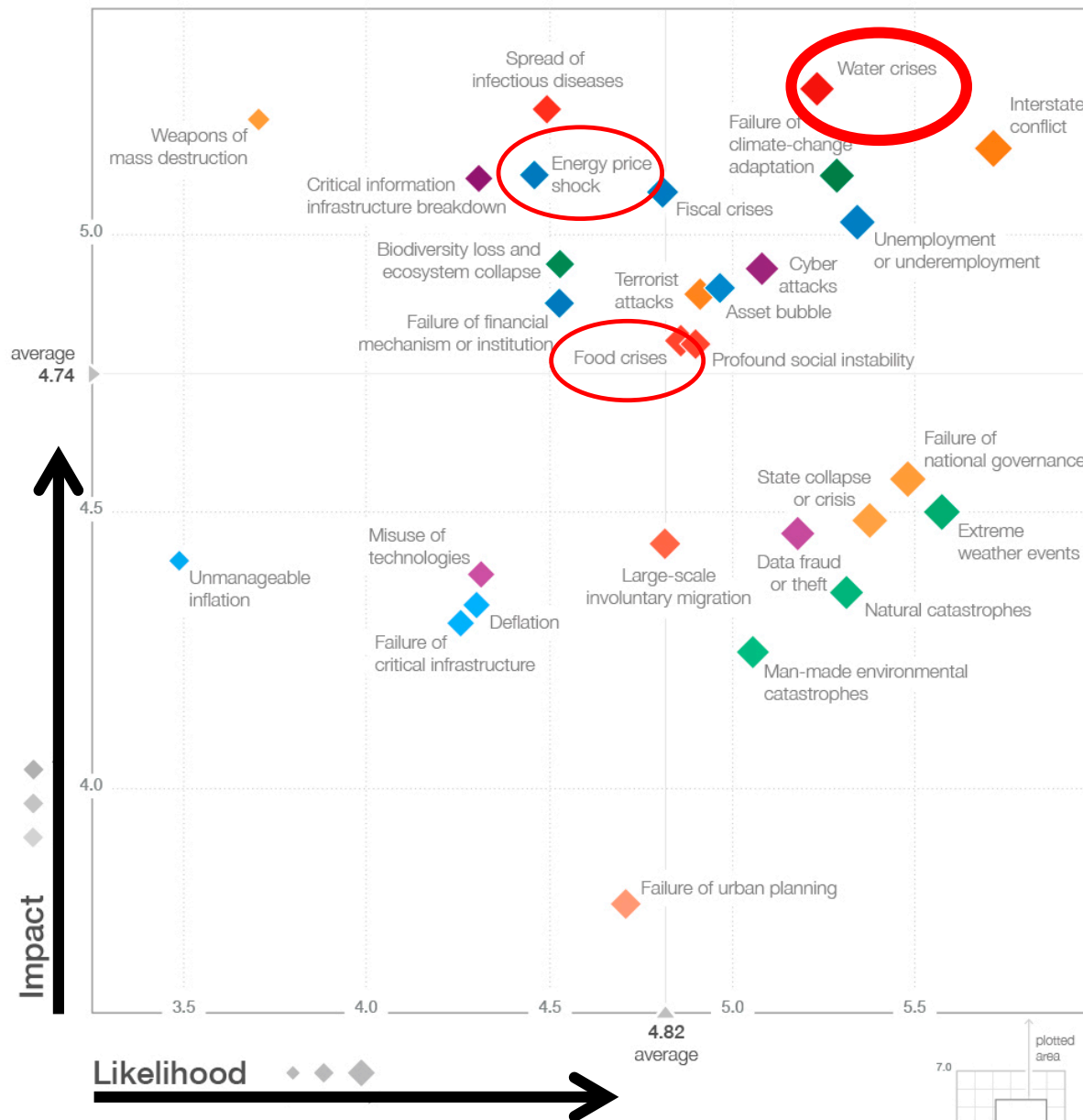
Projects

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## The Global Risks report 2015

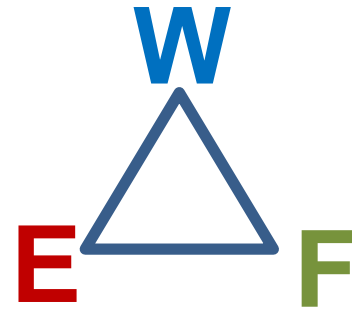




# The Global Risks Landscape 2015

What is the impact and likelihood of Global risks?

# Trends and opportunities

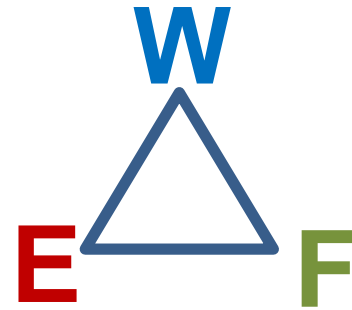


**By 2030:**

- 30% more water
  - 40% more energy
  - 50% more food
- 
- **Engineers' role is to solve this!**

**...But are these MOREs really needed ???  
Could we do something else?  
Perhaps with thinking in nexus!?**

# Trends and opportunities



## Food losses in the value chain

### Storage - transport – cooling

(In some countries 30-50% of crops do not get to market)

- **Investments in storage**

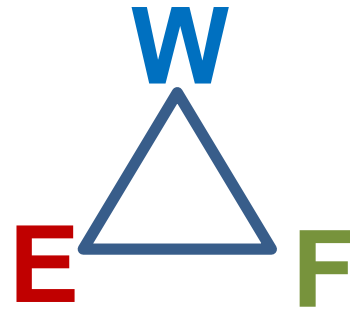
Governments, Companies and Farmers together

- **Resource efficiency**

**waste as valuable resource**



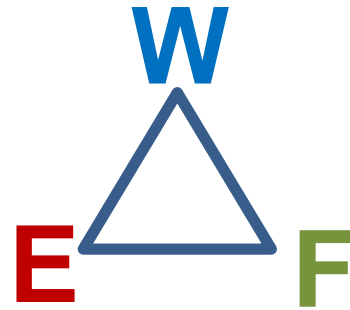
# Trends and opportunities



**More middle class consumers – keep economic growth  
changing diets: more demand for meat, dairy etc.**

- **We cannot say “no” on these needs!**
- **Other raw agricultural materials  
e.g. meat from soya**

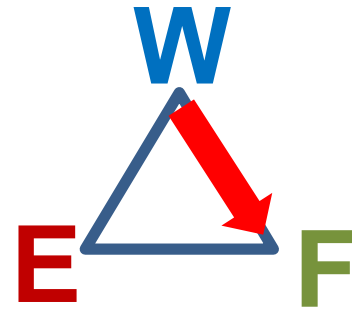
# Trends and opportunities



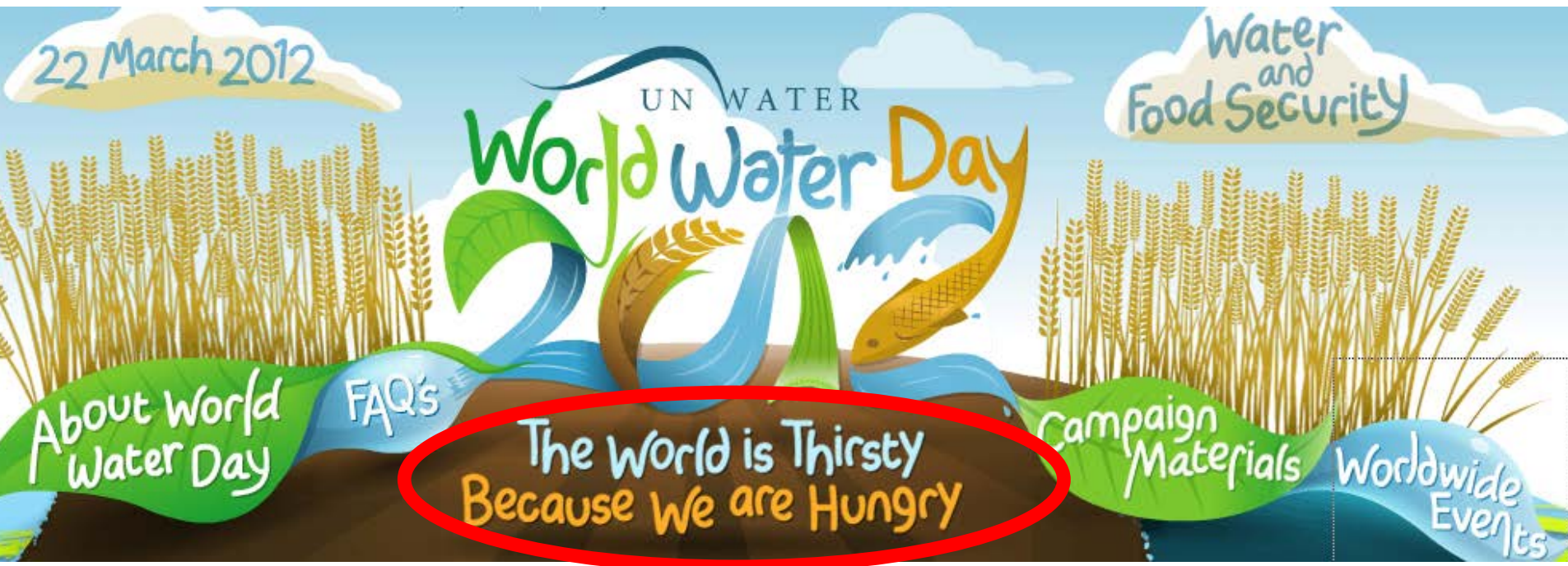
**High costs of energy and concerns over water scarcity drives innovation**

- **Decentralization of supply**
  - save on transport
  - difficulties in urban growth (energy, water supply and food)
- **Doing more with less**

# Water for food

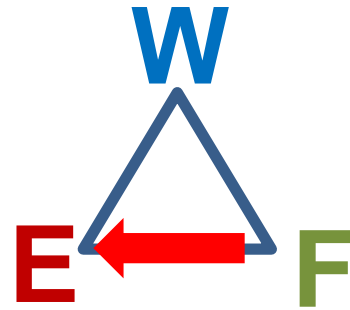


- Food production has high water footprint





# Nexus is also about policies



- Policies in one sector influence (or drive investments in) other sectors.
- Electricity policies in India (subsidies) enabled groundwater boom in irrigated food production.
- Energy policies (subsidies) drive biofuel boom

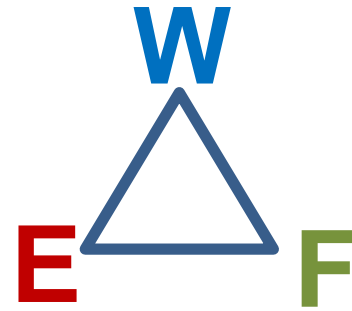
# Global Challenges and Drivers in Agriculture – – Water and Land Management



ICID•CIID

- The continuing food crisis and unstable food prices
- Lack of investments in agriculture and water
- Population growth
- Competition from other water users
- Climate variability – floods and droughts
- Lack of water storage capacity
- Demands for energy and alternative fuels
- Changing dietary patterns
- Weak institutional capacity
- Weakened applied research and technology transfer capabilities
- Environmental and water quality degradation

# Water, Energy and Food



- Consumer awareness
- Government awareness
- **Education, Knowledge Transfer**

Integrated planning among disciplines



**Nexus thinking**



Education

Research

Capacity Development

# Education for Water Professionals

Learn about our MSc programmes, courses, PhD opportunities and more...



Read more

[www.unesco-ihe.org](http://www.unesco-ihe.org) — Delft, The Netherlands



# ABOUT US

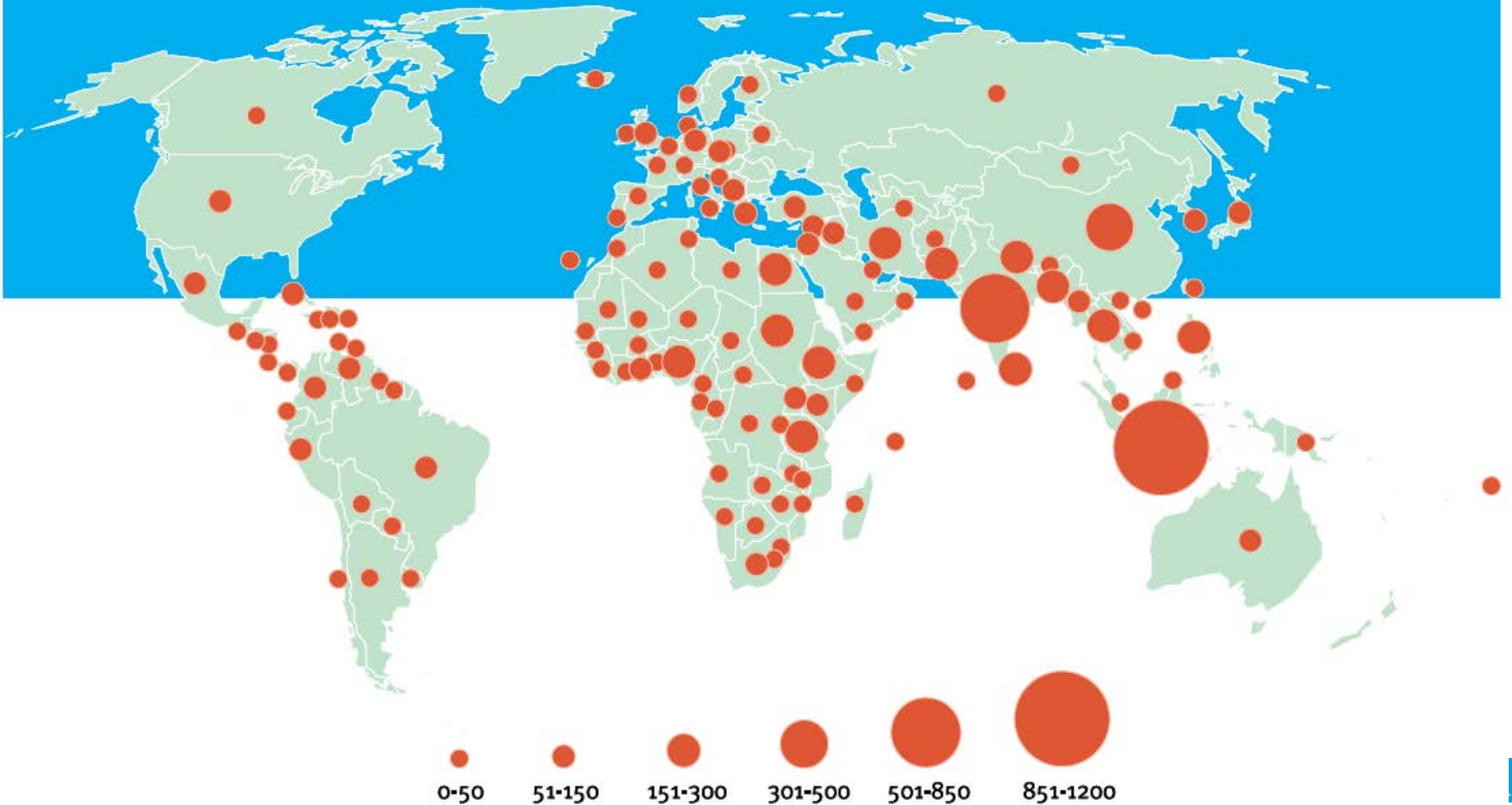
**Largest international postgraduate water education facility.**

**Fully accredited MSc degrees and PhDs.**

**Since 1957 more than 14,500 water professionals alumni from over 160 countries, the vast majority from the developing countries and countries in transition.**

**Research and capacity development projects throughout the world.**

# ALUMNI NETWORK



# CORE ACTIVITIES



**EDUCATION**

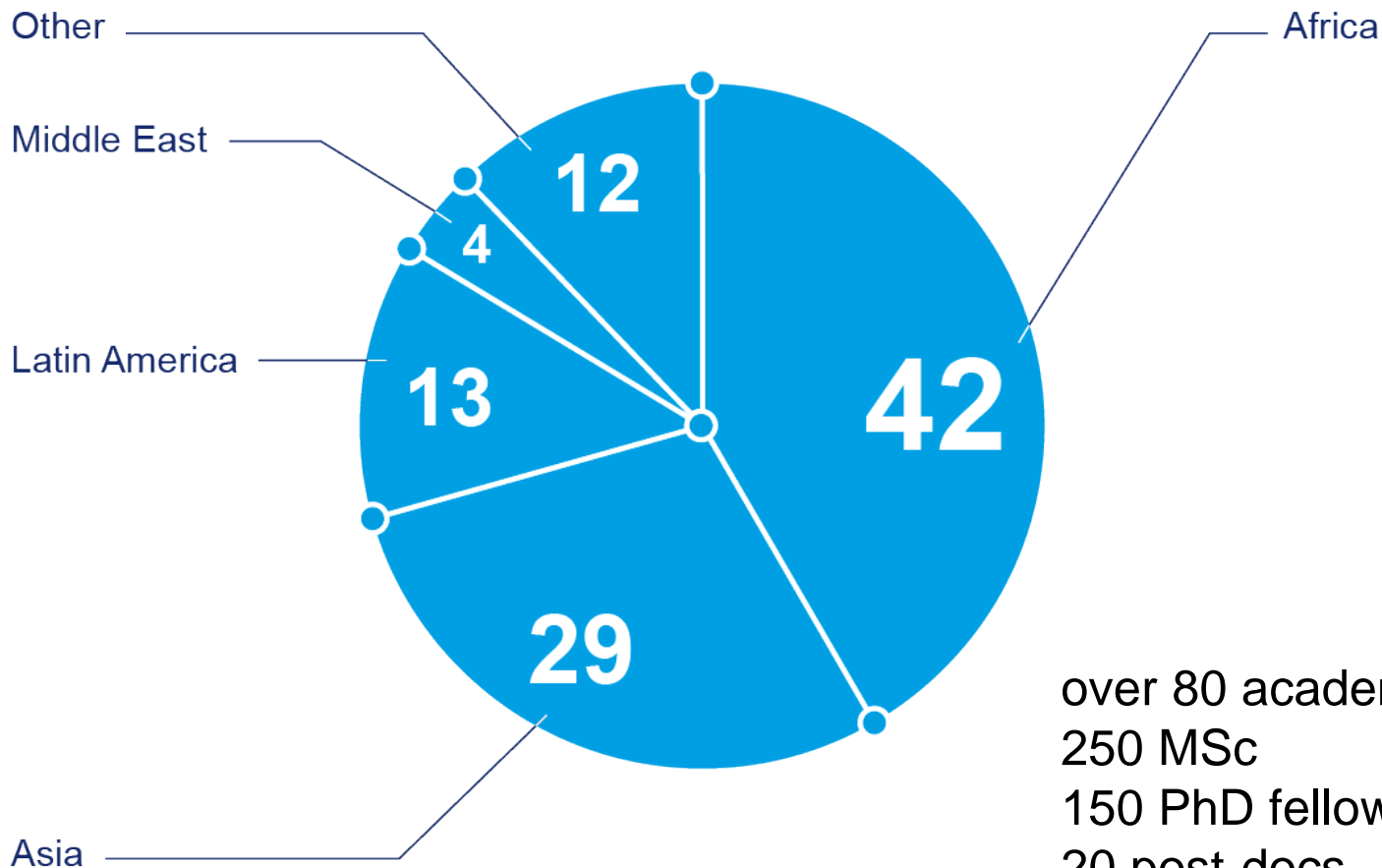
**RESEARCH**

**CAPACITY DEVELOPMENT**

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# STUDENTS REGION OF ORIGIN ACADEMIC YEAR 2013-2014

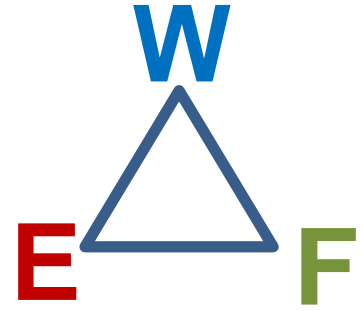
Percentage



over 80 academic staff  
250 MSc  
150 PhD fellows  
20 post-docs



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**THANK YOU!**

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