United Nations
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ユネスコ国際水文学計画（IHP）

日本ユネスコ国内委員会自然科学小委員会
IHP分科会 主査
（通称：日本IHP国内委員会 委員長）

寶　　馨　　（京都大学）

ユネスコ IHP の意義

- 国際的な水教育・科学事業の総胴元（金はない！）
- いろいろな水関連の教育・科学事業の情報が集約されている
- プロジェクト探し、研究ネタ探し
- 自分のプロジェクトを国際プロジェクトに位置づける（参加すると成果がユネスコ及び国連のネットワークを通じて発信される）
- 新たな国際課題を提案してユネスコの事業化する
- ユネスコ資料を教材として活用
- ユネスコへのインターンシップ
- 世界各地のユネスコ事務所、ユネスコセンター、ユネスコチェアと共同活動

IHPの経緯

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- 国際水文の十年（1965-1974）
- International Hydrological Decade, IHD
- 世界における水文観測を充実させ、水に関する科学・教育を発展させる
- 国連教育科学文化機関（ユネスコ）の国際教育科学事業
- 我が国は、土木学会水理委員会の中に水文小委員会を設置（初代委員長：井口昌平東大教授）。
- 大学等が試験流域を設置し水文学研究を推進。
- 水文小委員会はその後、水文部会に。

IHPの経緯(2)

United Nations Educational, Scientific and Cultural Organization

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- IHDの後継プロジェクトとして、1975年からIHPとOHPに分かれる
- IHP = 国際水文学計画（International Hydrological Programme）
  ユネスコが科学・教育的側面を推進
- 文部科学省ユネスコ国内委員会のなかに自然科学小委員会IHP分科会を設置（これが実質、日本のIHP国内委員会）。主査は日本ユネスコ国内委員会委員が務める。
- OHP = 実用水文学計画（Operational Hydrological Programme）世界気象機関（WMO）が実務的側面を推進
- 気象庁、建設省河川局（現・国土交通省水管理・国土保全局）、土木研究所などがOHPを推進。
- ドイツ・オランダなどは、IHP-OHP国内委員会を作っている。
- OHPはその後、HWRP (Hydrology and Water Resources Programme) に。

IHPの経緯(3)

United Nations Educational, Scientific and Cultural Organization

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- IHP政府間理事会 = ユネスコ本部で2年に1回開催。
- 6つの地域(Region): I（西欧・北米）、II（東・中欧）、III（中南米）、IV（アジア・太平洋）、Va（アフリカ）、Vb（アラブ諸国）から選出された36の理事国（4年任期）で構成。
- 日本は、近年ずっと理事国。
- IHP政府間理事会　議長（竹内邦良1998-2000）、副議長（高橋裕1990-1991、寶馨2008-2010）。
- 1991年よりIHPトレーニングコース（名古屋大学）を開始
- 1993年に、東南アジア太平洋地域運営委員会（RSC, Regional Steering Committee for Southeast Asia）を設立（初代議長：高橋裕東大教授）
- 2008年にユネスコ・カテゴリーII センターとして、土木研究所に水災害・リスクマネジメント国際センターを設立

IHPの経緯(4)

United Nations Educational, Scientific and Cultural Organization

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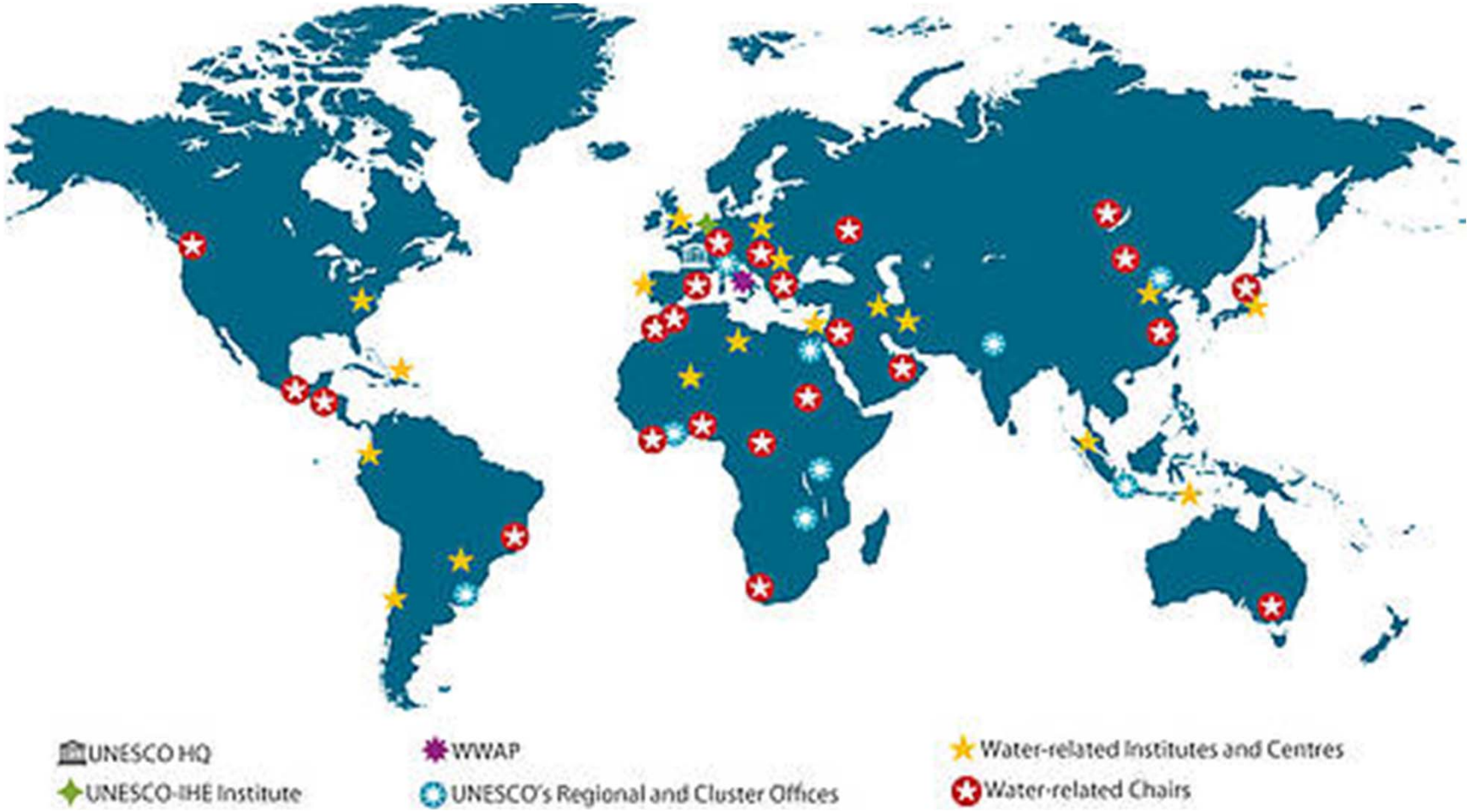
- IHP政府間理事会 で中期事業計画を策定
- IHP-VII (2008-2013)-- Water Dependencies: Systems Under Stress and Societal Responses
- IHP-VIII (2014-2021)-- Water Security: Responses to Local, Regional, and Global Challenges

UNESCO's Water Family



IHP-VII (2008-2013)

Water Dependencies:
Systems Under Stress
and Societal Responses

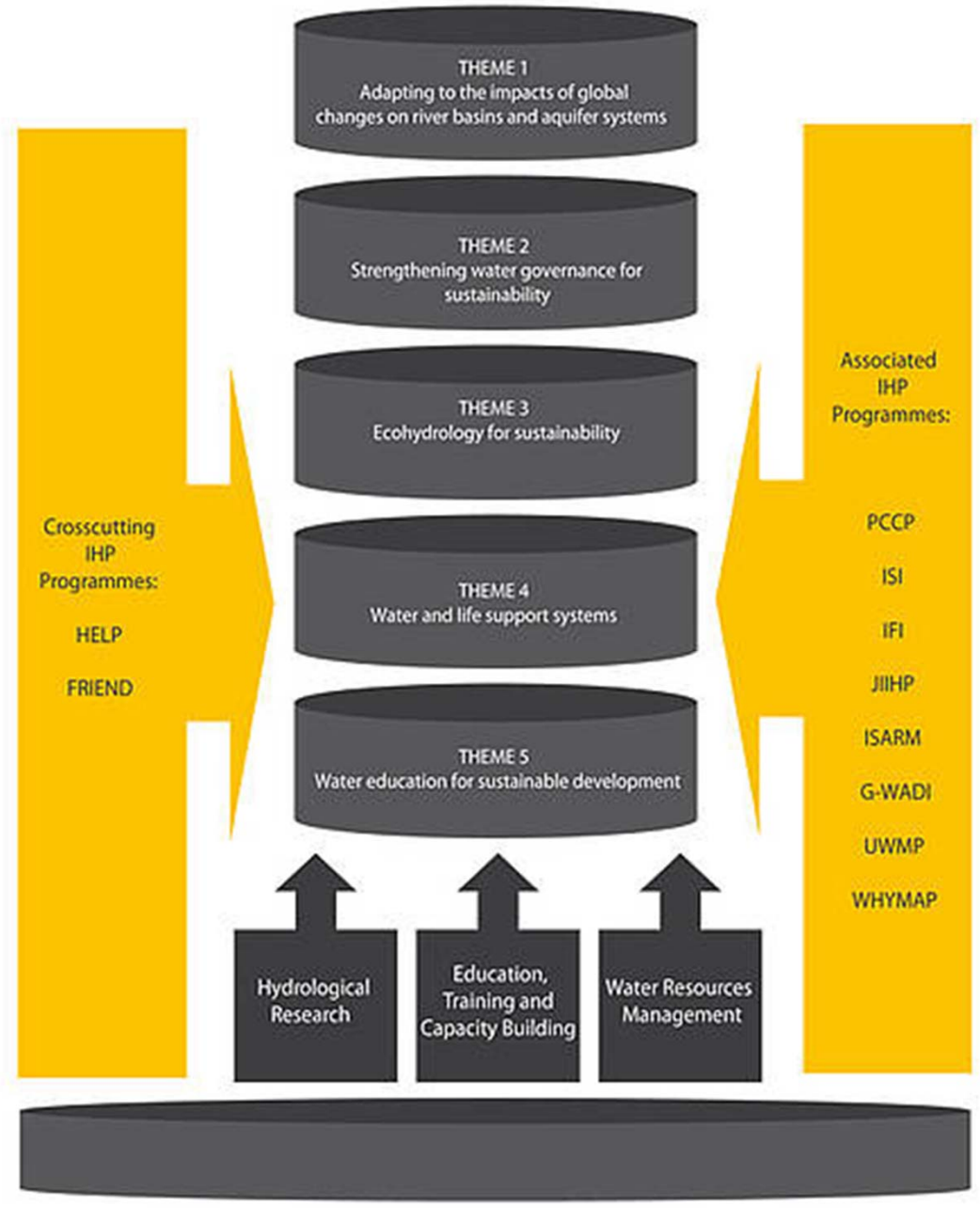
地球規模変動の河川流域や
地下水システムへの影響
に対する適応策

持続可能性のための
水ガバナンスの強化

持続可能性のための生態水文学

水・生命支援システム

持続可能な発展のための水教育



OVERVIEW OF THE RELATIONSHIPS BETWEEN THE CORE THEMES OF IHP VII, AND THE CROSSCUTTING AND ASSOCIATED PROGRAMME COMPONENTS

IHP 横断型プロジェクト(1)

- FRIEND (Flow Regimes from International Experimental and Network Data). An international research programme that helps to set up regional networks for analyzing hydrological data through the exchange of data, knowledge and techniques at the regional level
- GRAPHIC (Groundwater Resources Assessment under the Pressures of Humanity and Climate Change). A UNESCO-led project seeking to improve our understanding of how groundwater interacts within the global water cycle, how it supports human activity and ecosystems, and how it responds to the complex dual pressures of human activity and climate change.
- G-WADI (Global Network on Water and Development Information in Arid Lands). A global network on water resources management in arid and semi-arid zones whose primary aim is to build an effective global community to promote international and regional cooperation in the arid and semiarid areas.
- HELP (Hydrology for the Environment, Life and Policy). A new approach to integrated catchment management by building a framework for water law and policy experts, water resource managers and water scientists to work together on water-related problems.
- IFI (International Flood Initiative). An interagency initiative promoting an integrated approach to flood management which takes advantage of the benefits of floods and the use of flood plains, while reducing social, environmental and economic risks. Partners: the World Metereological Organization (WMO), the United Nations University (UNU), the International Association of Hydrological Sciences (IAHS) and the International Strategy for Disaster Reduction (ISDR).

IHP 横断型プロジェクト

- ISARM (Internationally Shared Aquifer Resources Management). An initiative to set up a network of specialists and experts to compile a world inventory of transboundary aquifers and to develop wise practices and guidance tools concerning shared groundwater resources management.
- ISI (International Sediment Initiative). An initiative to assess erosion and sediment transport to marine, lake or reservoir environments aimed at the creation of a holistic approach for the remediation and conservation of surface waters, closely linking science with policy and management needs.
- JIIHP (Joint International Isotope Hydrology Programme). A programme facilitating the integration of isotopes in hydrological practices through the development of tools, inclusion of isotope hydrology in university curricula and support to programmes in water resources using isotope techniques.
- PCCP (From Potential Conflict to Cooperation Potential). A project facilitating multi-level and interdisciplinary dialogues in order to foster peace, cooperation and development related to the management of shared water resources.
- UWMP (Urban Water Management Programme). A programme that generates approaches, tools and guidelines which will allow cities to improve their knowledge, as well as analysis of the urban water situation to draw up more effective urban water management strategies.
- WHYMAP (World Hydrogeological Map). An initiative to collect, collate and visualize hydrogeological information at the global scale to convey groundwater-related information in a way appropriate for global discussion on water issues.

IHP VIII (2014-2021)“Water Security: Responses to Local, Regional, and Global Challenges”

- 水災害と水文学的変化
- 変化する環境下での地下水
- 水の安全保障と水質
- 将来の水と人間居住
- 生態水文学―持続可能な世界のための工学的協調
- 水教育―水の安全保障のための鍵


Water-related Disasters and Hydrological Change
Groundwater in a Changing Environment
Addressing Water Scarcity and Quality
Water and Human Settlements of the Future
Ecohydrology, Engineering Harmony for a Sustainable World
Water Education, Key for Water Security
Water Security: Responses to Local, Regional, and Global Challenges

Water security:
Responses to local, regional, and global challenges

Water Education, Key for Water Security

1. Enhancing tertiary water education and professional capabilities in the water sector
2. Addressing vocational education and training of water technicians
3. Water education for children and youth
4. Promoting awareness of water issues through informal water education
5. Education for transboundary water cooperation

Ecohydrology, Engineering Harmony for a Sustainable World

1. Hydrological dimension of a catchment – identification of potential threats and opportunities for a sustainable development
2. Ecological catchment structure shaping for ecosystem potential enhancement – biological productivity and biodiversity
3. Ecohydrology system solution and ecological engineering for the enhancement of water and ecosystem resilience and ecosystem services
4. Urban ecohydrology – stormwater purification and retention in the city landscape, potential for improvement of health and quality of life
5. Ecohydrological regulation for sustaining and restoring continental to coastal connectivity and ecosystem functioning

Water and Human Settlements of the Future

1. Game changing approaches and technologies
2. System wide changes for integrated management approaches
3. Institution and leadership for beneficiation and integration
4. Opportunities in emerging cities in developing countries
5. Integrated development in rural human settlement

Addressing Water Scarcity and Quality

1. Improving governance, planning, management, allocation, and efficient use of water resources
2. Dealing with present water scarcity and developing foresight to prevent undesirable trends
3. Promoting tools for stakeholders involvement and awareness, and conflict resolution
4. Addressing water quality and pollution issues within an IWRM framework – improving legal, policy, institutional, and human capacity
5. Promoting innovative tools for safety of water supplies and controlling pollution

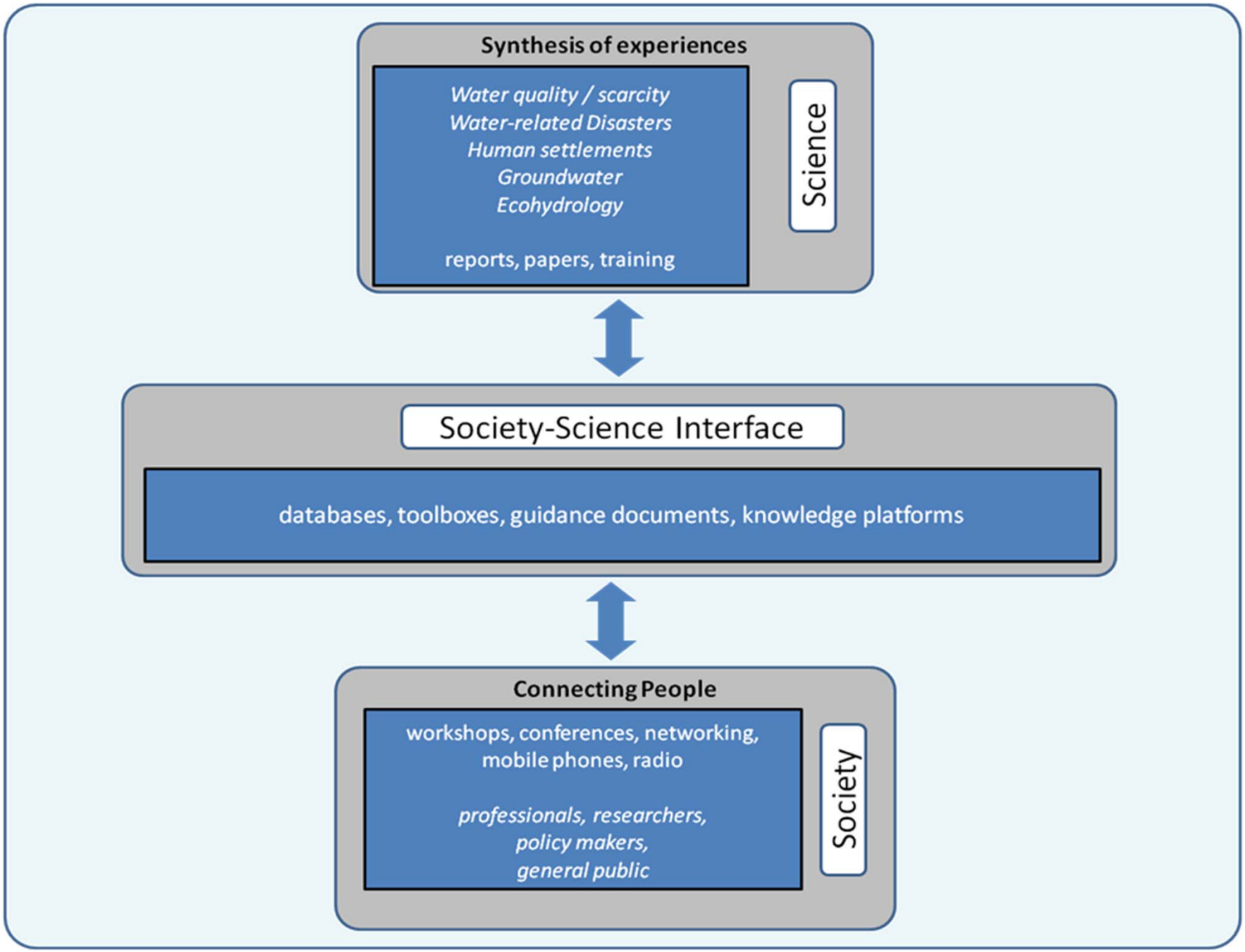
Groundwater in a Changing Environment

1. Enhancing sustainable groundwater resources management
2. Addressing strategies for management of aquifers recharge
3. Adapting to the impacts of climate change on aquifer systems
4. Improving management of shallow and coastal aquifers
5. Promoting management of transboundary aquifers

Water-related Disasters and Hydrological Change

1. Risk Management as adaptation to global changes
2. Understanding coupled human and natural processes
3. Benefiting from global and local Earth observation systems
4. Addressing uncertainty and improving its communication

Global Change | **Governance** | **Human Dimension** | **Transboundary or Shared Waters** | **Integrated Water Resource Management**


Synthesis of experiences
Water quality / scarcity
Water-related Disasters
Human settlements
Groundwater
Ecohydrology
reports, papers, training
Science
Society-Science Interface
databases, toolboxes, guidance documents, knowledge platforms
Connecting People
workshops, conferences, networking,
mobile phones, radio
professionals, researchers,
policy makers,
general public
Society

東南アジア太平洋地域での活動

東南アジア太平洋地域運営委員会（RSC-SEAP）

歴代議長 (Chair)

- 1993-1995 Yutaka Takahasi (Japan)
- 1995-1997 Baddrdin Macibub (Indonesia)
- 1997-1999 Soontak LEE (R. Korea)
- 1999-2001 Keizrul Abdullar (Malaysia)
- 2001-2003 Richard Ibbitt (NZ)
- 2003-2005 Tran Thuc (Vietnam)
- 2005-2007 Eddy Djajadiredja (Indonesia)
- 2007-2009 Leonardo Liongsson (The Philippines)
- 2009-2011 Heng Liu (China)
- 2011-2013 Trevor Daniell (Australia)

歴代事務長 (Secretary)

- 1993-1999 Kuniyoshi Takeuchi (Japan)
- 1999- Kaoru Takara (Japan)

東南アジア太平洋地域での活動
RSC meetings

1. The Philippines (1993)
2. Cambodia (1994)
3. Japan (1995)
4. Indonesia (1996)
5. Thailand (1997)
6. Republic of Korea (1998)
7. China (1999)
8. New Zealand (2000)
9. Viet Nam (2001)
10. Malaysia (2002)
11. Fiji (2003)
12. Australia (2004)　13. Indonesia (2005)
14. Thailand (2006)
15. The Philippines (2007)
16. Mongolia (2008)
17. China (2009)
18. Vietnam (2010)
19. Japan (2011)
20. Malaysia (2012)

REVIEW AND EVALUATION MEETING ON THE

"IHP – WINGA ASPAC"

International Hydrological Programme – Water Interoperability Networks for Global Change Adaptation in Asia Pacific Region

ACTIVITIES OF UNESCO JAKARTA ASSISTED BY THE JAPANESE FUND IN TRUST

PROGRESS REPORT from 2008
PROJECT 555RAS2008

PROJECT BACKGROUND

- The International Hydrological Programme (IHP), UNESCO's intergovernmental scientific co-operative programme in water resources, is a vehicle through which Member States can upgrade their knowledge of the water cycle and thereby increase their capacity to better manage and develop their water resources.

- The programme is implemented through the collaboration and participation of the National IHP Committees of Southeast Asia and the Pacific, hydrological Institutions and water related Research Centres (including UNESCO water centers)

PROJECT AIM AND PROJECT APPROACH

- In the framework of the International Hydrological Programme with particular reference to climatic variability and changes, the present WINGA project intends to develop, in the ASPAC Region, measures for the:
- assessment,
- monitoring,
- mitigation and
- adaptation to the impacts of global changes on river basins and aquifers and
- strengthening of scientific approaches for improved water management (including urban water management) and capacity building and education at all levels.

PROJECT AIM AND PROJECT APPROACH

- The present project proposes, with 4 components, a thorough approach to water resources in general by maintaining
- **1)** the interoperability of water networks in the ASPAC region (Regional Steering Committee Meeting for Southeast Asia and the Pacific), essential to the implementation of interlinked activities both at national and regional levels,
- **2)** the IHP training courses,
- **3)** Flood disaster prevention and mitigation measures in Asia and the Pacific region (including DRH) and
- **4)** the approach to the Urban Hydrology project with particular reference to the Sustainable Water Management in Asian Cities (SWITCH-*in*-*Asia*).

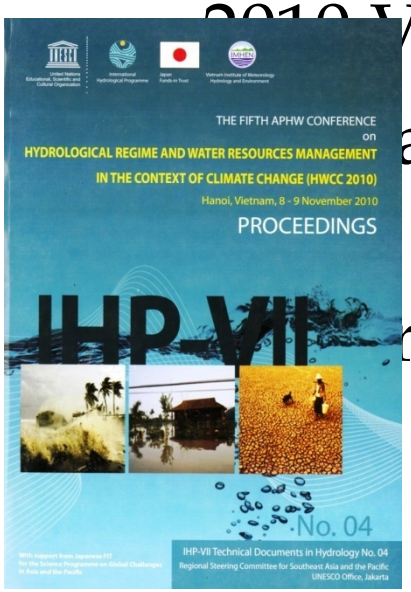

INTERNATIONAL HYDROLOGICAL PROGRAMME (IHP)
Regional Steering Committee (RSC) for South East Asia and the Pacific (SEAP)
IHP Nagoya Training Courses
FLOOD DISASTER PREVENTION AND MITIGATION
SWITCH-in-Asia
AP-FRIEND
Flood Design
Rainfall IFD
FLOOD FORECASTING AND WARNING SYSTEM
DRH
Disaster Reduction Hyperbase
CAMBODIA
INDONESIA
PHILIPPINES
VIET NAM
REGIONAL: JAKARTA

1. Interoperability (results from 2008)

RSC MEETINGs and Joint International conferences:

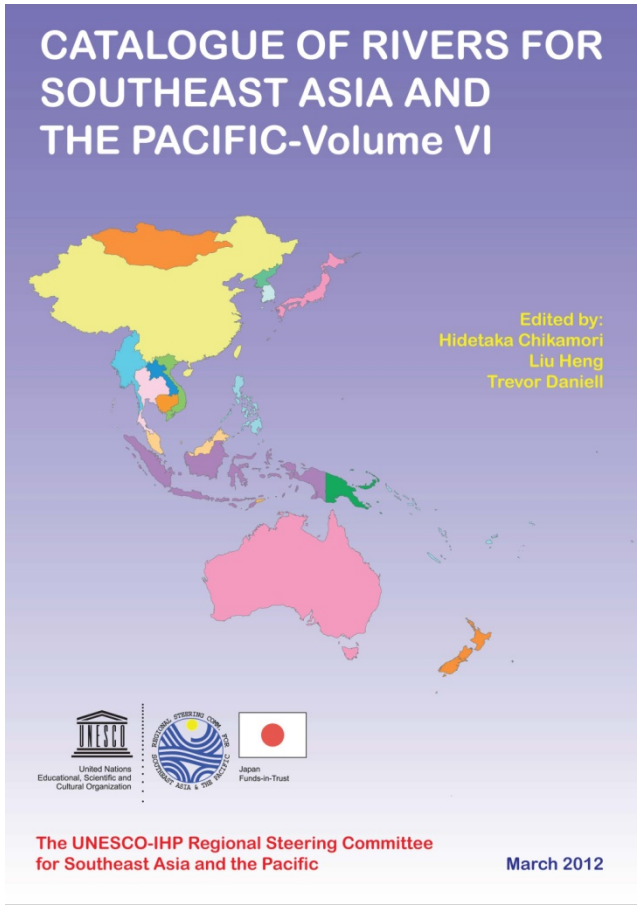
- 2008 Mongolia, 120 participants
- 2009 China, 100 participants
- iet Nam, 200 participants
- apan 70 particip
- ries

(50



1. Interoperability (results from 2008)

Catalogue of Rivers, Volume VI:



Contains:

- 7 basins from 7 countries (121 total Vol I-VI)
- 3 basins from new countries, Korea DPRI, Mongolia and Myanmar

1. Interoperability (results from 2008) - findings

RSC MEETINGs and Joint International conferences:

- Approx 500 people have received the Proceedings of the conferences: these are also available in UNESCO Jakarta website and also disseminated through the IHP Natcoms

A questionnaire (included in the progress report) on *"how JFIT Science Programme contributed to the countries' capacity building and science policy making"* was submitted at the 19th RSC meeting in Kyoto, October 2011 and responded by 16 countries.

1. Interoperability (results from 2008) - findings

Summary of questions:

- Sharing of information acquired during RSC meetings:
  - *Through different ways (IHP Natcoms, Universities, Agencies/Institutions)*
- **In the past, I have incorporated what I have learned from IHP symposiums, trainings and RSC meetings with our country's science sector policy/ programme.**
  - Except for Myanmar and Timor-Leste, almost all participants incorporated their leanings with their country's science sector policy/ programme through the academic societies and governmental panel/ committee in hydrologic issues.
  - For example, in New Zealand, IHP activities contributed to the development of Fresh Water Database, the elaboration of flood design programme which are practiced in Japan and other countries.

1. Interoperability (results from 2008) - findings

Summary of questions:

- **In the past, I have incorporated what I have learned from IHP symposiums, trainings and RSC meetings with our country's science sector policy/ programme.**
    - In China, IHP activities contributed to the technical development in hydrology, especially in Yangtze River and Changjiang River basin management. Also, the monitoring, forecasting, risk mitigation skills and technology which are gained from IHP activities have been incorporated in their 12th Five Year Plan.
    - In Indonesia, through IHP the Indonesian Institute of Science (LIPI) research findings were integrated into Indonesian Water Law No.7, in 2004. IHP Activities also resulted in the establishment of a UNESCO Cat. 2 Water Centre (APCE)
    - Viet Nam upgraded the Water Resources Law

2. IHP Nagoya Training Courses (results from 2008)

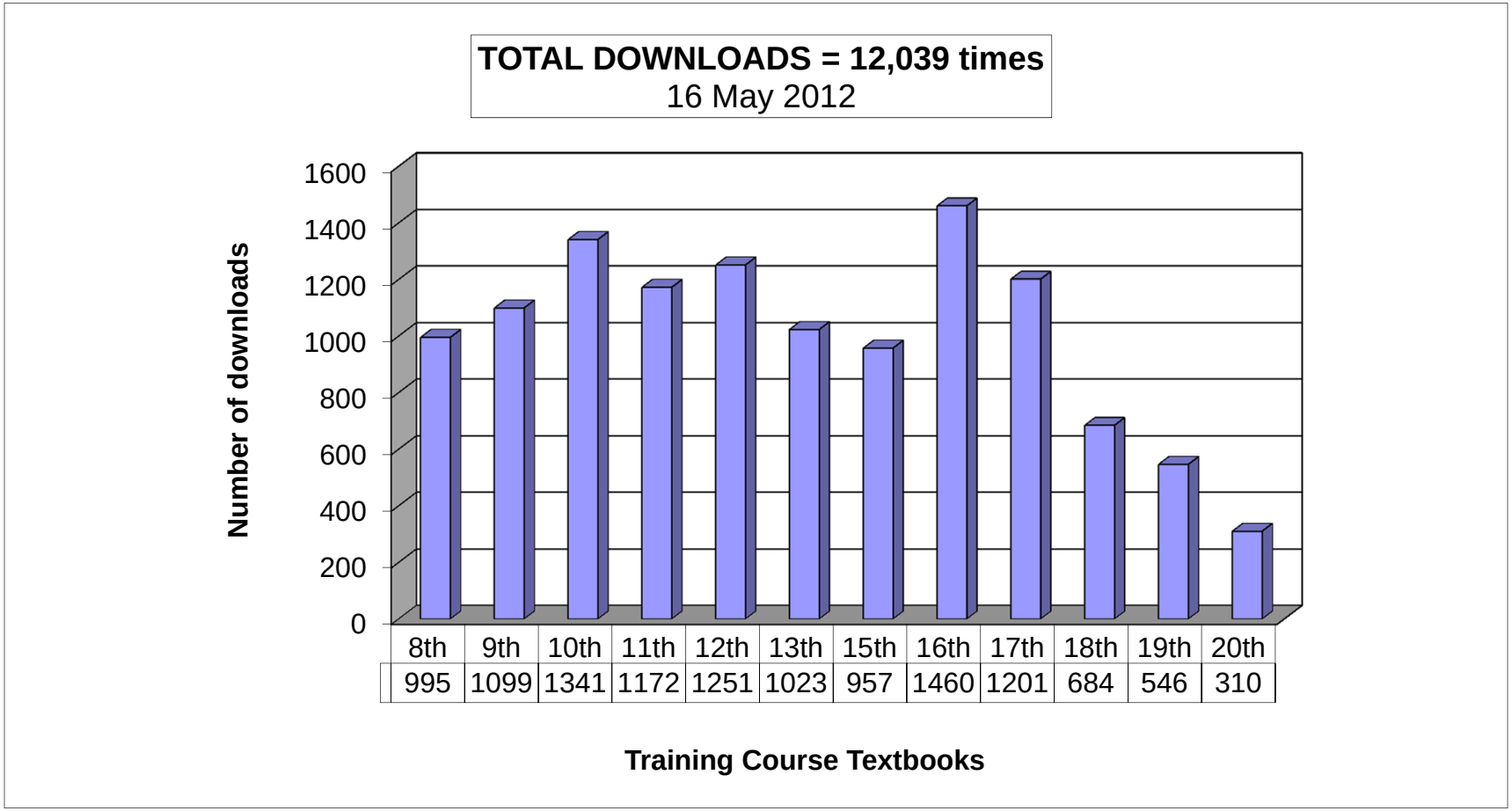
- 18th TC 2008 8 participants
- 19th TC 2009 20 +50 (e-learning) participants
- 20th TC 2010 14 + 130 (e-learning) participants
- 21st TC 2011 16 + 77 (e-learning) participants

Total **315 participants** (14 countries)

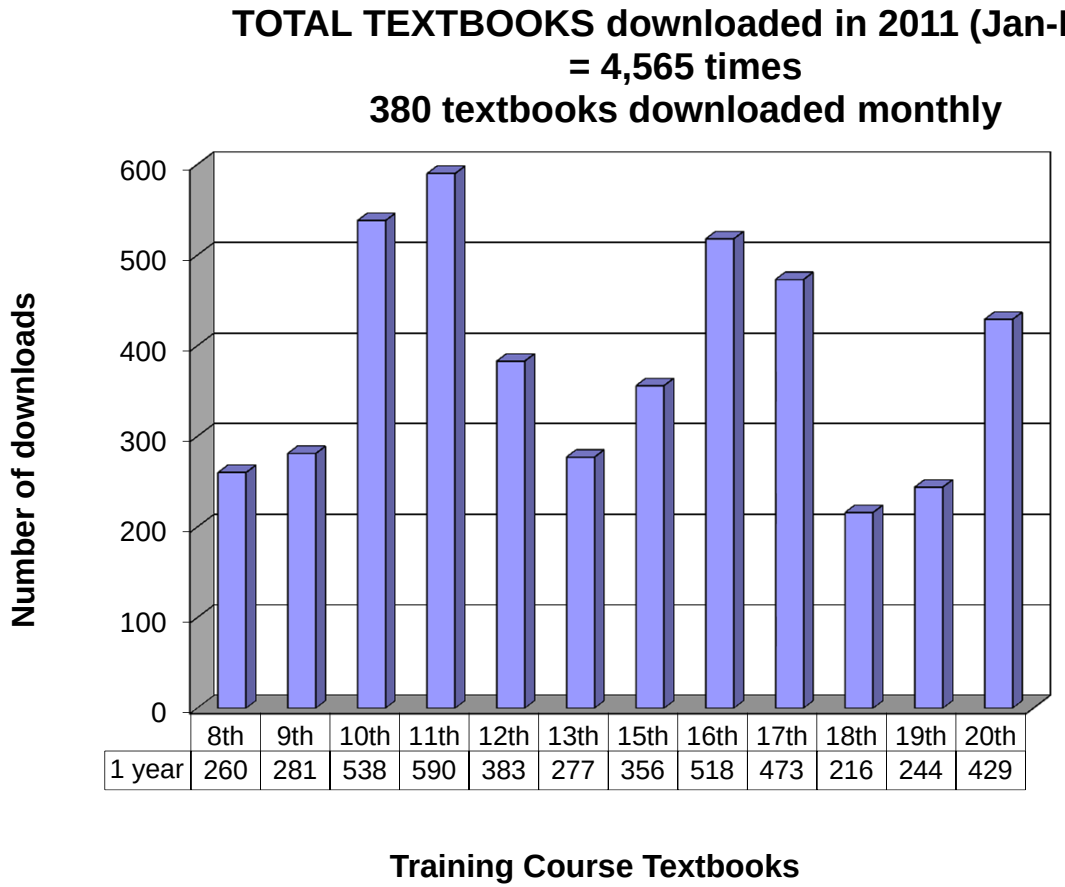
2. IHP Nagoya Training Courses (results from 2008) major achievements

- Training Course Data Base (2007)
- Training course website (since 2008). Allows to have different kind of information:
  - Training courses background in 6 languages (Chinese, Indonesian, Korean, Vietnamese, English and Arabic)
  - To download training course textbooks (so far over 12,000 downloads)

2. IHP Nagoya Training Courses (results from 2008) major achievements



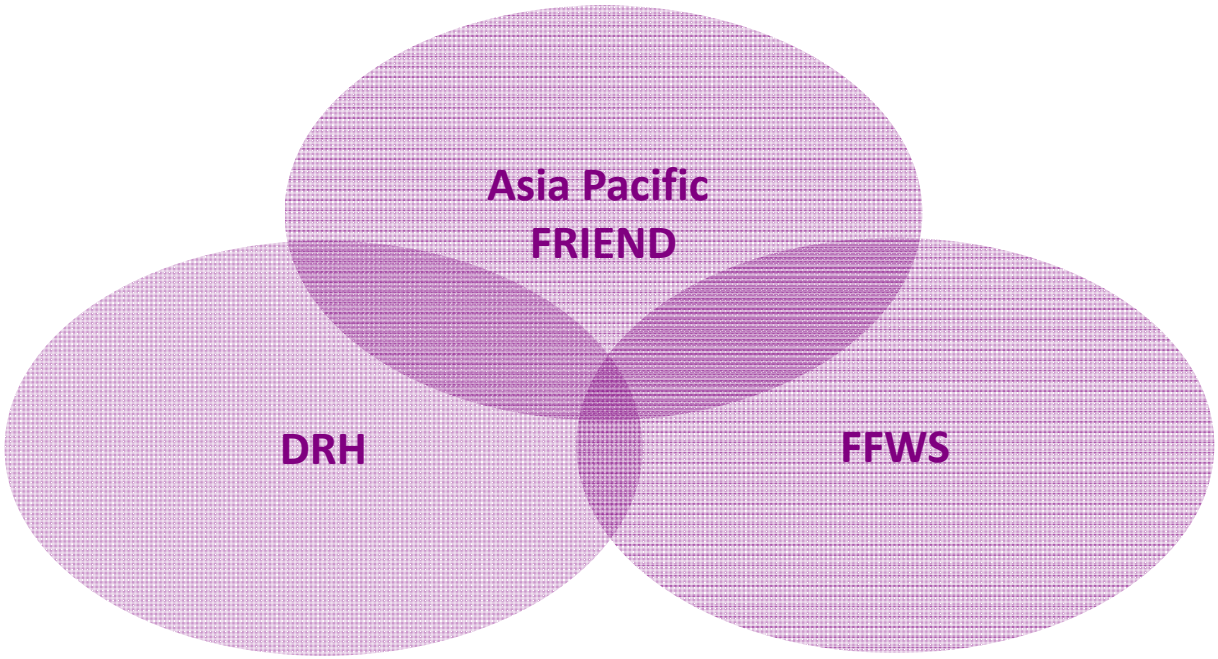
2. IHP Nagoya Training Courses (results from 2011) major achievements



2. IHP Nagoya Training Courses (results from 2008) major achievements

- Enabled distance e-learning since 2009 (in collaboration with the Engineering Sciences and Technology Unit EST through its e-learning network, i.e. SOI-Asia, NREN's and INHERENT) able to connect to different University, Institutions and Research centres in the region). Allowed to pass from 50 physical attendances to 257 distance participations in 3 TCs
- Success stories;
    - Dr Gadis Sri Hariani from LIPI Indonesia who became director of the *Limnology Centre* in 2004 after having followed the Limnology TC;
    - Dr Phan Thi Kim Van from IGC (VAST) who became director of the *Water Resources Centre* in January 2011 after having followed the 20th TC
    - We are continuing monitoring success stories, having written to participants of various TCs (so far 15th, 16th, 17th)

3. Flood disaster Prevention (results from 2008) major achievements



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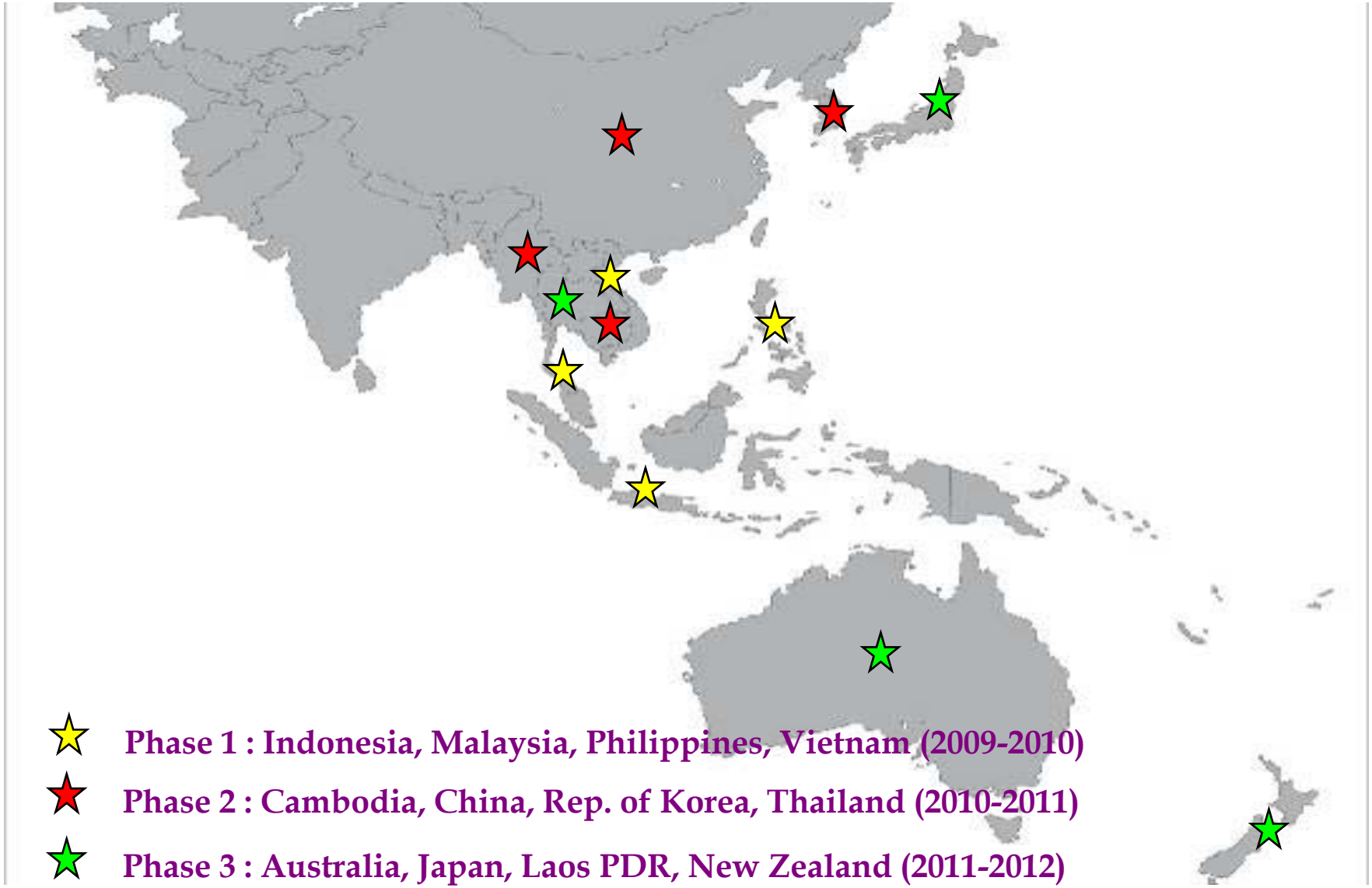
Assessment of Flood Forecasting and Warning Systems Project



Phase 1 : Indonesia, Malaysia, Philippines, Vietnam (2009-2010)

Phase 2 : Cambodia, China, Rep. of Korea, Thailand (2010-2011)

Phase 3 : Australia, Japan, Laos PDR, New Zealand (2011-2012)

- **<u>Organized Workshop in 23-25 May 2010:</u>**
  - **80 Participants from 8 countries**
- **<u>Publish State-of-art Report :</u>**
  August 2012

Disaster Reduction Hyperbase

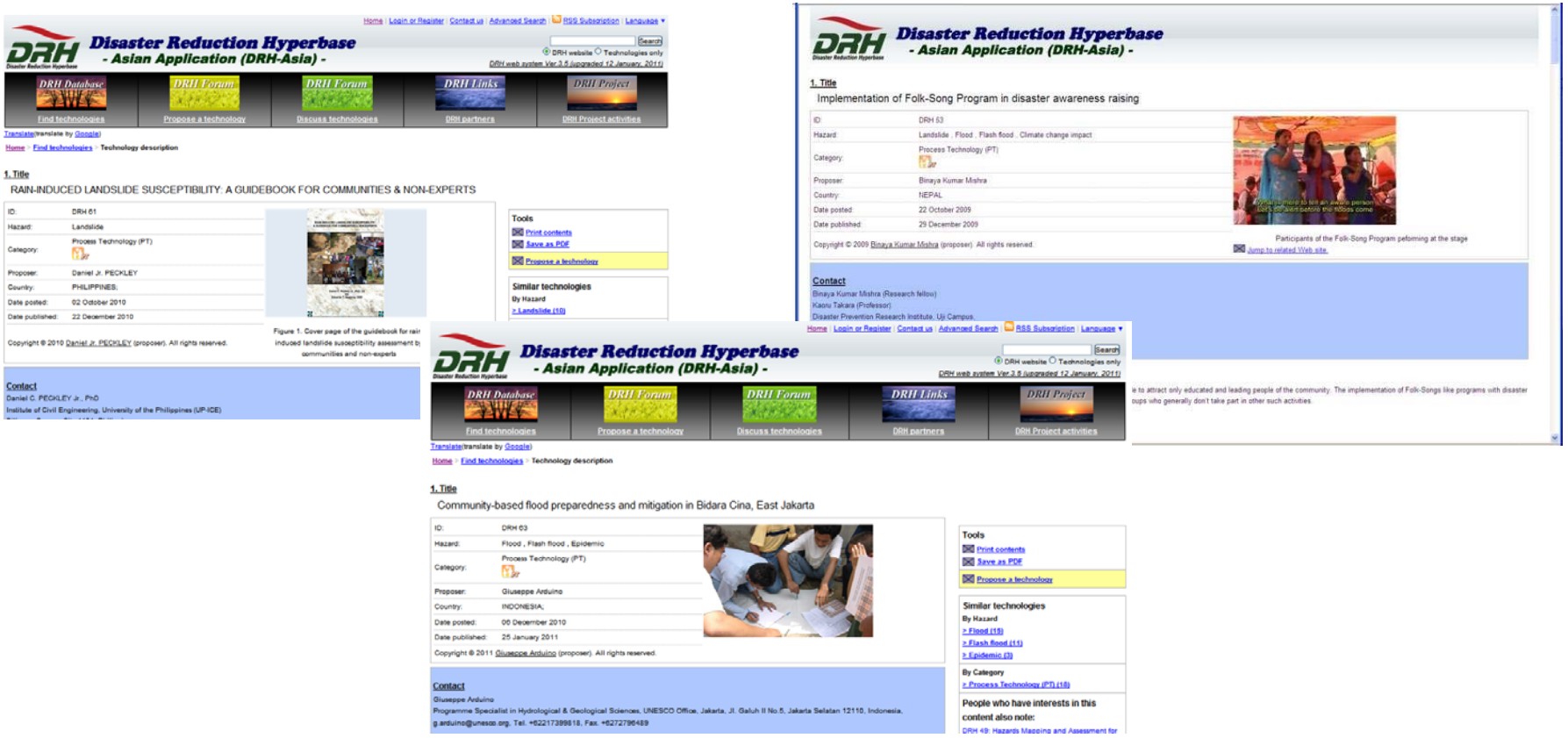
List of Meetings and Workshops (2009-2011):

		Nr. Particip.
1.	1st IHP-DRH Management Meeting, Kyoto, 2009	3
2.	1st IHP-DRH Workshop, Wuhan, 2009	14
3.	2nd IHP-DRH Management Meeting, KL, 2010	11
4.	3rd IHP-DRH Management Meeting, Kyoto, 2010	5
5.	2nd IHP-DRH Workshop, Hanoi, 2010	23
6.	DRH Application Workshop, Kyoto, 2011	15
7.	Sustainability/survivability Science on Disaster Risk Reduction Technology Database Seminar, 2011	8
8.	3rd IHP-DRH Workshop, Kyoto, 2011	20
9.	4th IHP-DRH Management Meeting, 2011	3
	Total Participants	102

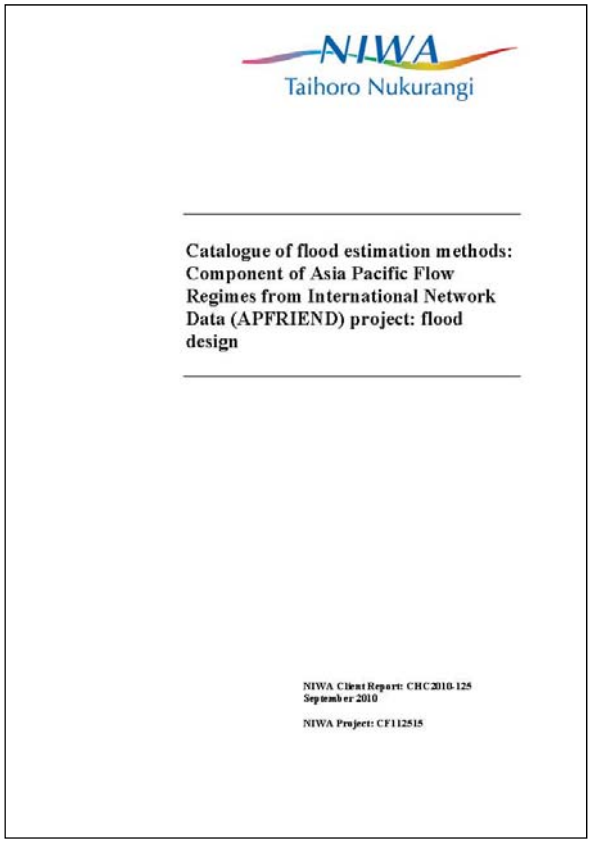
Disaster Reduction Hyperbase

Accomplishments

1. Establishment and Enhancement of IHP-DRH collaboration scheme
2. Publication of 3 IHP- DRH Contents in DRH website



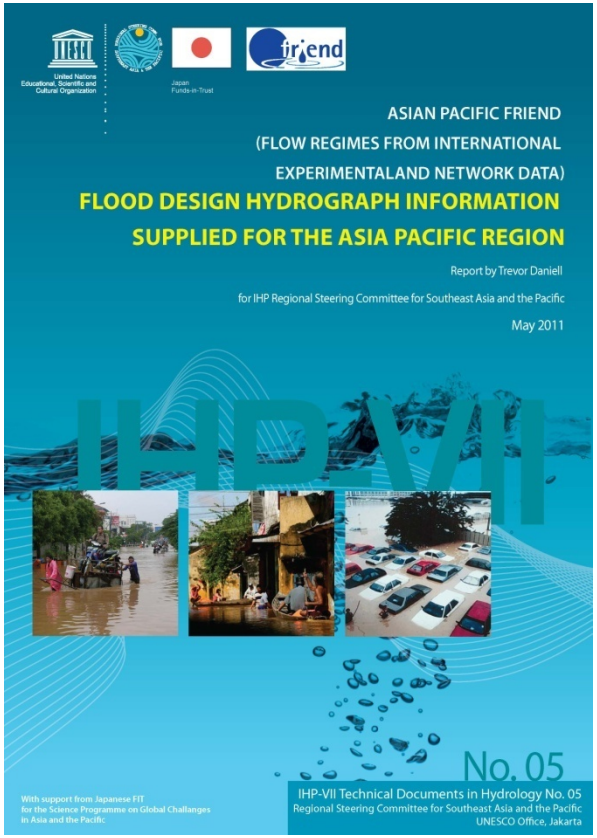
Asia Pacific FRIEND Phase 2


NIWA
Taihoro Nukurangi

Catalogue of flood estimation methods: Component of Asia Pacific Flow Regimes from International Network Data (APFRIEND) project: flood design

NIWA Client Report: CHC2010-125
September 2010

NIWA Project: CF112515



4. Sustainable Water to Improve Tomorrow's Cities Health (SWITCH-*in-Asia*)

- The SWITCH-*in-Asia* Programme consists of various country based projects in the region which will be demonstrating concrete aspects of innovation towards sustainable Urban Water Management and linked with a regional learning alliance

4. Sustainable Water to Improve Tomorrow's Cities Health (SWITCH-*in-Asia*)

List of Meetings and Workshops (2009-2012):

		Nr. Participants
1.	SWITCH-IPA Indonesian Component Workshop, 2009	50
2.	SWICH-in-Indonesia Follow Up Meeting, 2009	20
3.	SWITCH-in-Asia Regional Partnership Meeting, 2009	90
4.	International Workshop on UNESCO new Ecohydrology Demonstration Site projects, 2011	36
5.	Citarum Learning Alliance Inception Meeting, 2011	13
6.	Hanoi Learning Alliance Inception Meeting, 2012	13

Participants 222

4. Sustainable Water to Improve Tomorrow's Cities Health (SWITCH-*in-Asia*)

Accomplishments (2009-2012):

1. Establishment and enhancement of SWITCH Regional and National Partnerships
2. Establishment of 2 Learning Alliances in Hanoi and Citarum
3. Development of Pilot Project in Citarum Basin (Design Stage)

4. Sustainable Water to Improve Tomorrow's Cities Health (SWITCH-*in-Asia*)

THANK YOU FOR YOUR KIND ATTENTION

United Nations
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Japan
Funds-in-Trust

REVIEW AND EVALUATION MEETING ON THE PROPOSED ACTIVITIES OF UNESCO JAKARTA ASSISTED BY THE JAPANESE FUND IN TRUST PERIOD 2012 - 2014

IHP – WINGA ASPAC
PROPOSAL for Phase IV
International Hydrological Programme – Water Interoperability Networks for Global Change Adaptation in Asia Pacific Region

Introduction to the proposed activities/proposal

In the framework of the International Hydrological Programme **focusing on the impacts of climatic variability and changes**, the present project intends, in the ASPAC Region:

1.to strengthen scientific approaches for improved **water resources management** policies and governance with reference to **hydrological hazards and extreme events;**

2.enhance water related technical capacity-building and education at all levels;

3.to reduce and address risks arising from land-based and freshwater natural disasters with particular emphasis on **extreme events**

Project Approach

The approach intends to be scientific in terms of quality results but the attempt is to convey as much as possible the scientific achievements to local governments and communities in order to integrate and develop in the long term the *sustainability science* concept.

INTERNATIONAL HYDROLOGICAL PROGRAMME (IHP)

BIENNIAL PRIORITIES 36C/5 (2012-2013):

- Strengthen scientific approaches for improved water management policies and governance, focusing on the impacts of climate change on water resources management, particularly in arid and semiarid zones and in urban systems, via specific efforts such as the Managing Aquifer Recharge (MAR), Global Network on Water and Development Information for Arid Lands (G-WADI), Groundwater Resources Assessment under the Pressures of Humanity and Climate Change (GRAPHIC);
- enhance water related technical capacity-building and education at all levels; provide approaches for adapting to the impacts of global changes on river basins and aquifers;
- support national and regional efforts to develop, integrate and complement capacities to reduce and address risks arising from land-based and freshwater natural disasters with a focus on policy advice, knowledge sharing, awareness-raising, and education for disaster preparedness, paying particular attention to integrating a gender perspective and to youth;

Regional Steering Committee (RSC)
for South East Asia and the Pacific (SEAP)

IHP Nagoya Training Courses

HYDRO HAZARDS/EXTREME EVENTS

SWITCH-*in Asia*

- CAMBODIA
- INDONESIA
- PHILIPPINES
- VIETNAM

FLOODS

- AP-FRIEND
- FFWS (IFAS TCs)

DROUGHTS

- MAR
- GWADI
- GRAPHIC

LANDSLIDES

- ICL (INTERNATIONAL CONSORTIUM OF LANDSLIDES) Southeast Asia Network

DRH Disaster Reduction Hyperbase

REGIONAL STEERING COMMITTEE FOR SOUTHEAST ASIA AND THE PACIFIC

- The RSC is **vital for the implementation of interlinked activities in the region**, i.e. the APFRIEND Phase 2 on flood design data interpretation in the region as a follow-up and continuation and direct relations to the Flood disaster prevention and mitigation measures in Asia and the Pacific region, and links with the dissemination platform DRH.

- The 20th RSC-SEAP meeting planned to be held in Langkawi, Malaysia, 5-9 November 2012
- The Meeting will be held in conjunction with:
  - **2nd International Conference on Water Resources (ICWR2012) "Sharing Knowledge of Issues in Water Resources Management to Face the Future"**
  - IHP-DRH Workshop

22nd IHP TRAINING COURSE

- the 22nd IHP training course in Nagoya November-December 2012
- The title of the proposed training course is

"**Precipitation Measurement from space**"

22nd IHP TRAINING COURSE

The 22nd IHP training course is focused on the following major topics:

(1) Precipitation is one of the major components of the Earth climate system.

(2) Precipitation has also a big impact as a major fresh water resource to the ecosystem and human activity.

(3) Observation of precipitation distribution is crucial not only for understanding and predicting changes of precipitation under the current global climate change but also for human activities. Global or even locally, precipitation observation is, however, difficult, because it has large spatiotemporal variations.

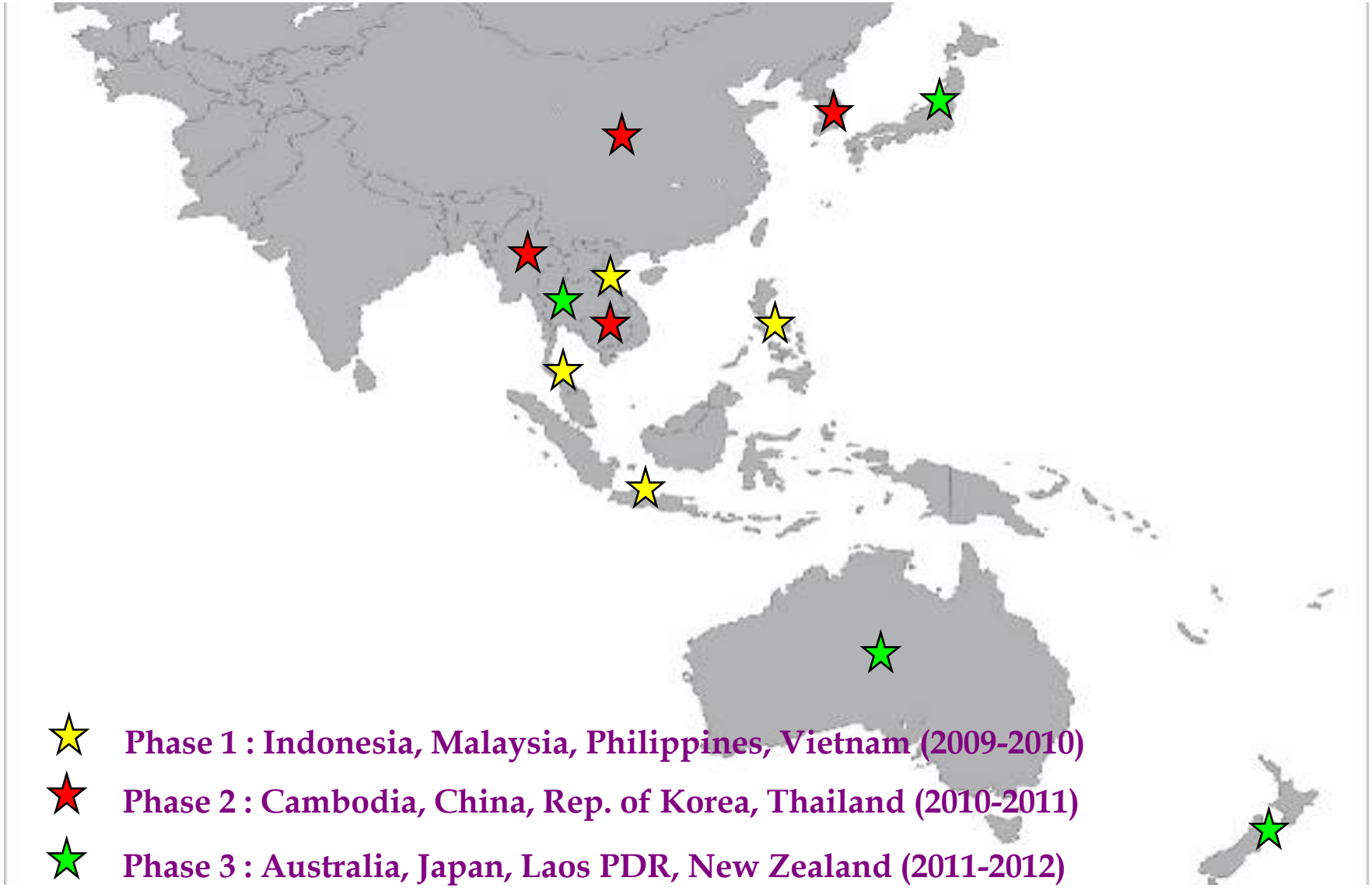
22nd IHP TRAINING COURSE

The TC main objectives are to

- introduce the basics of precipitation retrieval from space and current global precipitation maps
- Demonstrate examples of global precipitation maps from space
- Practice sessions will be used to acquiring learning skills in order to use the precipitation maps.

HYDRO HAZARDS/EXTREME EVENTS

Floods



Phase 1 : Indonesia, Malaysia, Philippines, Vietnam (2009-2010)

Phase 2 : Cambodia, China, Rep. of Korea, Thailand (2010-2011)

Phase 3 : Australia, Japan, Laos PDR, New Zealand (2011-2012)

HYDRO HAZARDS/EXTREME EVENTS

Droughts

- Droughts as further examples of hydrological extremes
- usually affecting vast regions with a more widespread and extensive range of impacts and last for a longer period.
- Under the growing threat of water scarcity, droughts may have several economical, social and environmental impacts depending on their intensity and duration
- As climate change is expected to raise the number of extreme situations of flooding and drought, both in frequency and in duration, enhanced understanding and improved capacities to manage and adapt to these situations becomes more essential to reduce the impacts of these extremes; especially in arid regions where water stress is more severe and impacts from hydrological extremes impair a wider magnitude on availability of water resources as well as the social dilemma.

HYDRO HAZARDS/EXTREME EVENTS

Droughts

Currently IHP is addressing Droughts through 3 Global Flagship programmes;

- MAR – Managing aquifer recharge
- G-WADI – Global Network on Water and Development Information in Arid Lands
- GRAPHICS – Groundwater Resources Assessment under the Pressure of Humanity and Climate Change

HYDRO HAZARDS/EXTREME EVENTS

Droughts - MAR

- MAR – Managing Aquifer Recharge
  - Pilot project in Viet Nam (Ninh Thuan Province) with UNESCO FO (Ha Noi)
  - Pilot project on Managing Aquifer Recharge will be used, thorough assessment in water quality and quantity and social mapping on water uses, to develop a groundwater database and monitoring system in the coastal areas of the Ninh Thuan Province, as well as adaptation measures to the communities affected.
  - The sustainability science concept will be here integrated with proper investigations on how the communities use water resources for human consumption and agricultural purposes, their needs and expectations, in the attempt of integrating "scientific" achievements in daily customs and practises.

HYDRO HAZARDS/EXTREME EVENTS

Droughts - MAR

HYDRO HAZARDS/EXTREME EVENTS

Droughts – G-WADI

- G-WADI – Global Network on Water and Development Information in arid lands
  - Pilot projects in China and Iran with UNESCO FOs
  - will be used to demonstrate impacts of extreme hydrological situations in two Asian G-WADI Pilot Basins, namely Heihe River Basin in China and Kashafroud River Basin in Iran
  - Taking stock of the data and resources already available within these two basins through the Asian G-WADI Network, knowledge and experience of the Asian G-WADI countries as well as the Global G-WADI Network will be shared with relevant authorities of the Heihe and Kashfroud Basins in order to develop the integrated basin-wide model which will ultimately result in principals towards an adaptation plan for optimized use of water

HYDRO HAZARDS/EXTREME EVENTS

Disaster Reduction Hyperbase as diss. platform

- **Disaster Reduction Hyperbase Phase V:**
  - DRH management part was transferred in early April 2011 to the Disaster Prevention Research Institute (DPRI), Kyoto University. This will include several developments as for example involvement of younger generations and more ample educational purposes and dissemination to larger audience
  - Coupled with the Hydrohazards/Extreme Events activities
  - It will be used as a web based dissemination platform of the activity results in order to provide an effective information facility for appropriate disaster reduction technology and knowledge among stakeholders

HYDRO HAZARDS/EXTREME EVENTS

- **DRH**

  - IHP member countries, can have strong cooperation with DPRI **to complement the lack of water hazard-related contents in DRH system**.
  - The fact that DRH has migrated to DPRI will give **enhancement to the educational prospective of DRH**, giving therefore **a strong contribution to the ESD** and **sustainability science** concepts and therefore will pave the way to further projects to populate the DRH database.

Sustainable Water to Improve Tomorrow's Cities Health in Asia (SWITCH-*in-Asia*)

SWITCH-in-Asia

Sustainable Water to Improve Tomorrow's Cities Health
(SWITCH-*in-Asia*)

Objective and approach:

- A visionary programme for the Asia and Pacific region that aims at tackling the challenges brought by global change on the management of water resources in Asian Cities.
- Calls for a paradigm shift in Urban Water Management (UWM)
- Work on developing, applying and demonstrating a range of tested scientific, technological and socio-economic solutions and approaches, contributing to the development of effective and sustainable UWM schemes in Asian Cities.
- Consists of three main components: Action Research, Demonstration and Capacity Building

Sustainable Water to Improve Tomorrow's Cities Health (SWITCH-*in-Asia*)

Focus:

- The regional programme will be developed through a number of national projects in selected countries and cities throughout the region, currently in Cambodia, Indonesia, the Philippines and Vietnam
- Efforts are focused in:
  - Establishing partnerships
  - Establishing learning alliances
  - Secure funding resources
- Potential partners for the SWITCH-*in-Asia* projects are IHE-Delft, APSARA (Cambodia), The Department of Environment and Natural Resources ¨DENR (Philippines), The Vietnamese Academy of Science and Technology (Vietnam), APWF, IHP ASPAC Natcoms, UNESCO ASPAC Field Offices, UNESCO Category II Centres, UNEP, UNESCAP and UNHABITAT. Possible donors are EU, ADB, AusAID, World Bank

Sustainable Water to Improve Tomorrow's Cities Health
(SWITCH-*in-Asia*)
Learning Alliance

- Learning Alliances can be represented by sets of connected stakeholder *platforms*. Their structure and activities will be designed to optimize relationships.
- The goals of the SWITCH-*in-Asia* LAs are:
  - The diffusion and discussion of research results.
  - The dissemination and discussion of the approaches of old, ongoing and future projects in the field of water management.
  - The creation of knowledge networks to develop synergies and enhance the production of new knowledge in the field of water management.
  - The establishment of collaboration and the inclusion of different stakeholder groups in the debate related to the water management field.

THANK YOU FOR YOUR KIND ATTENTION