

# Early career research experience in Japan



Japan National  
Young Water Professionals



**Japan-YWP 5th International Symposium in WET2016**

**Workshop theme - *Working as an early-career researcher***  
*~Development of international academic career ~*

**Rajendra KHANAL**

**Postdoctoral Researcher**

**Research Center for Water Environment Technology**

**The University of Tokyo, Japan**

**[rajendra.khanal@gmail.com](mailto:rajendra.khanal@gmail.com)**

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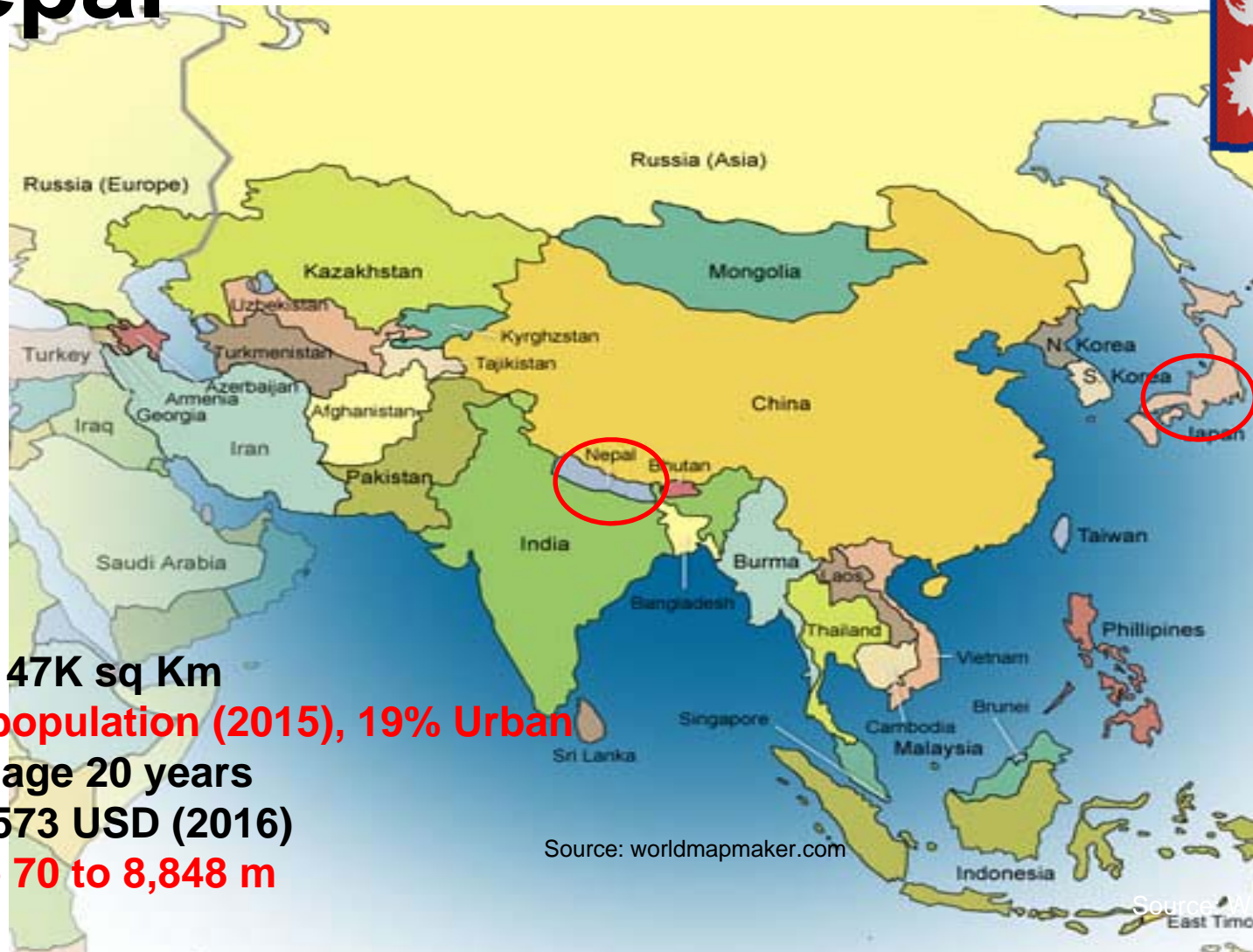
## Research experience

- *Prior to Japan – Study and work in Nepal*
- *In Japan*
  - ✓ *Doctoral study*
  - ✓ *Postdoctoral research*
  - ✓ *Environmental leadership*
  - ✓ *YWP activities*

## Social and cultural experience

- *Networking activities*
- *Volunteer participation*
- *Travelling*
- *...and many more*

# Nepal



Nepal, 147K sq Km  
~30Mil population (2015), 19% Urban  
Median age 20 years  
PPP: 2,573 USD (2016)  
Altitude 70 to 8,848 m

Source: worldmapmaker.com

Source: WWP

# How is Nepal known?



**Country of HIMALAYAS, Natural beauty**

-Mt. Everest (8,848 m)

-8 out of 10 highest peaks in the world

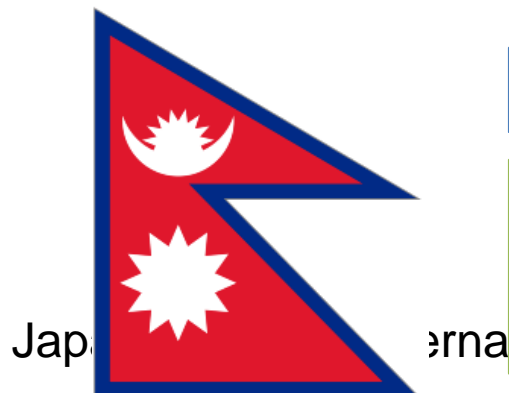
**Country of the birthplace of LORD BUDDHA**

**Lumbini is in Nepal!**



**Country with a UNIQUE FLAG**

**Only national flag in the world that is  
triangular in shape!**







Pokhara



Mountain flight



Trekking





Elephant riding  
象



One-horned rhinoceros  
サイ



Tiger  
虎

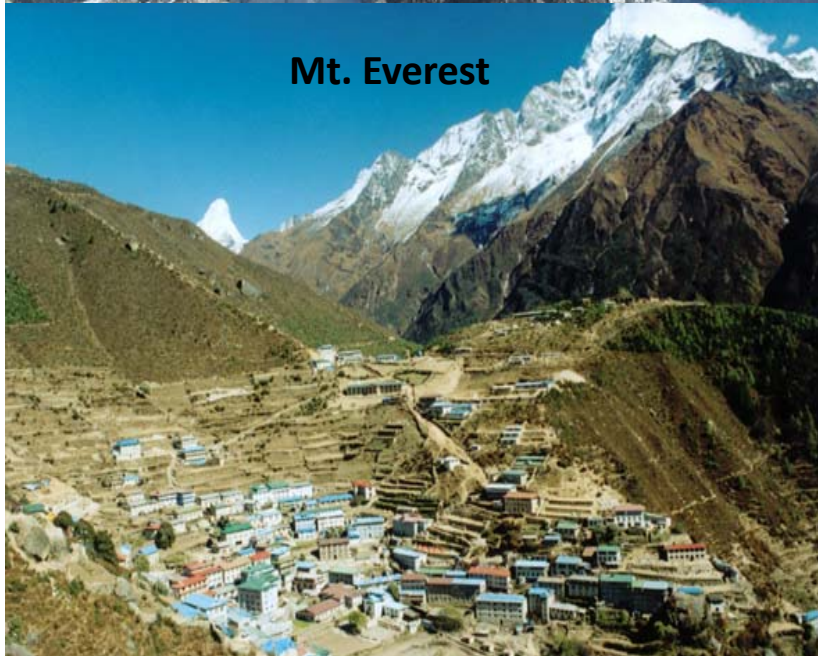


Gharial (crocodile)  
ワニ





Mt. Everest



Snow leopard ヒョウ



Red panda パンダ



Lophophorus ニジキジ

# Environmental Problems in Nepal

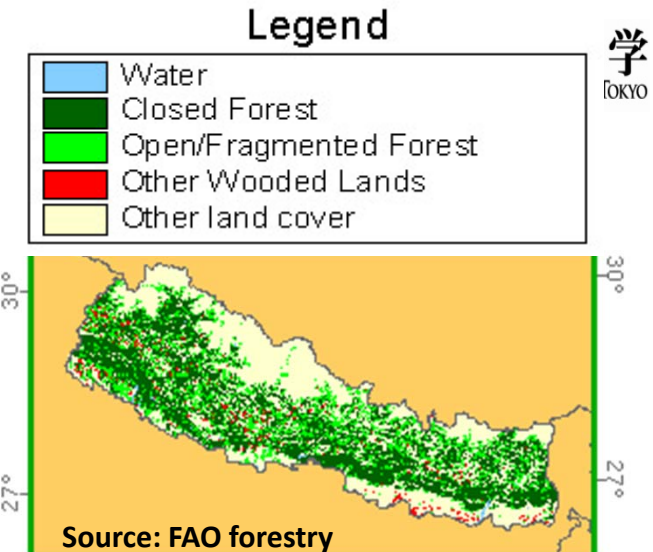
- Deforestation and land degradation
- Water and soil pollution
- Energy crisis
- Urbanization
- Solidwaste



# 1. Deforestation

- Forest area decreasing from 45% to 27.3% during 1966 to 2010 (FAO, 2010)
- **Urbanization, mega-projects, firewood, fodders**

Impacts	Control measures
• Soil nutrient loss	• Reforestation
• <b>Landslide</b>	• <b>Community owned forest</b>



## 2. Water and soil pollution

### (Discharge of effluents )

- Rich in natural water (melting of himalayans)
- **Industrial Effluent Standards: 9 specific and 3 generic**
- Lack of enforcement of the law



### Impacts:

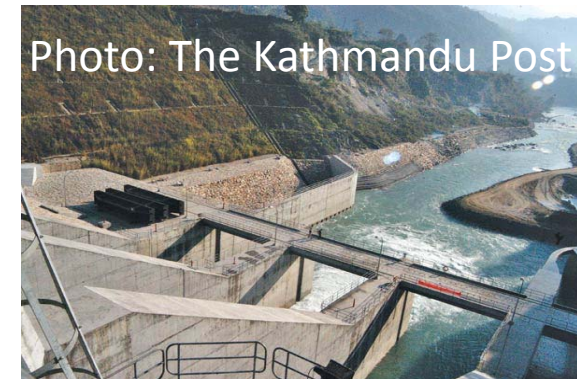
- Decreased fertility of land
- **Hygiene and sanitation**
- Contaminants in food chain





# 3. Energy crisis

- Hydropower potential (84,000 MW equivalent to 3% of world electricity demand).
- **However, < 1% electricity generation**
- Use of LPG, kerosene oil, coal, fossil fuel and forestwood as source of energy



Impacts	Control measures
• Deforestation	• 20,000 MW by 2020
• <b>Industrial growth</b>	• <b>Foreign investment</b>

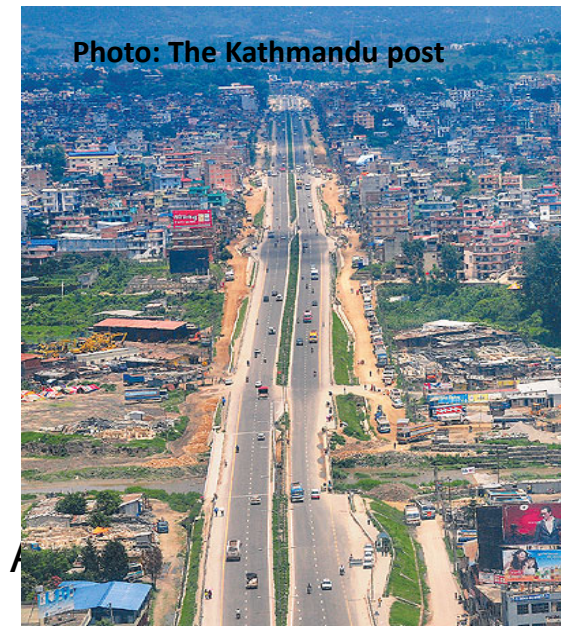
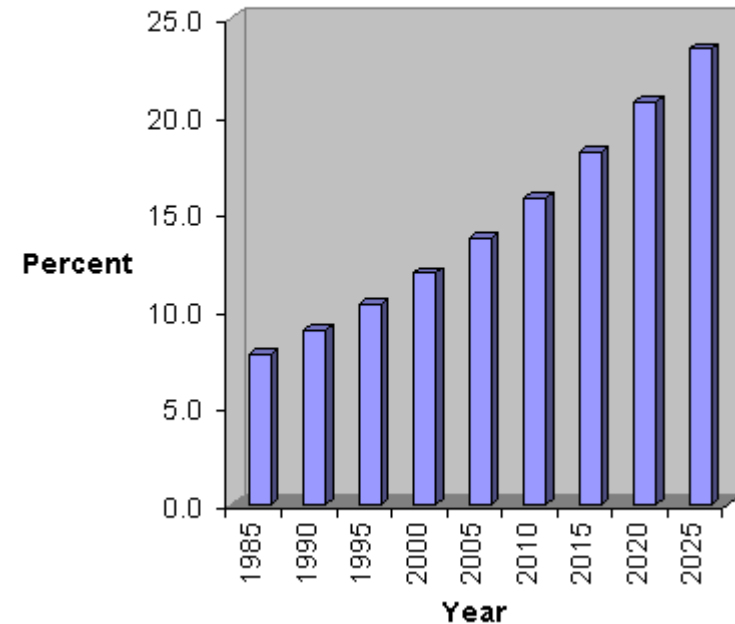
# 4. Urbanization

- Urban population 5.6 Mil
- **Physical proximity of service delivery points**
- Threat on bio-diversity
- **Increasing slum-population**

Impacts	Control measures
• Pressure on resources	• Decentralized government
• <b>Pollution</b>	• <b>Urban planning</b>

Urbanization level(Nepal)

Source: UN Habitat, 2012





# 5. Solidwaste

- Avg. waste waste generation rate **0.34 kg/person/day**
  - Japan: < 1.00 kg/person/day
- Urban solid waste generation **700,000 tons per year** (SWMRMC, 2004).
- Collection rate < 50% and haphazard dumping



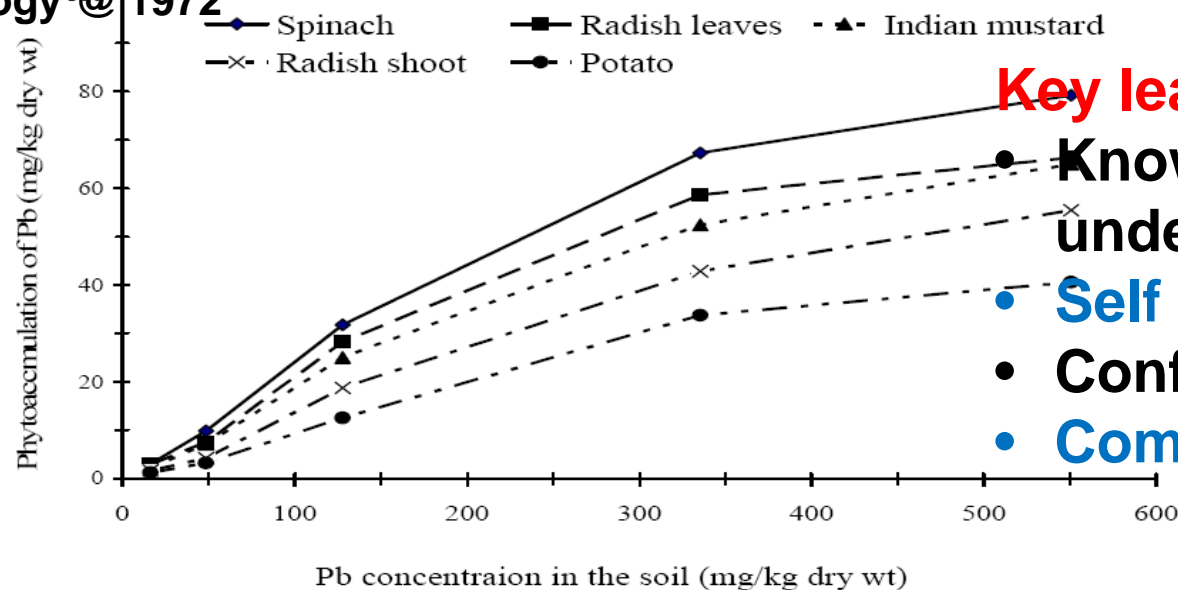
# Prior to Japan

Academic: B. Tech / M. Tech (Food Tech.)

*Master's thesis: Phytoaccumulation of Pb and Cr*



Central Campus of Technology, Dharan, Nepal, 1<sup>st</sup>  
Food Technology<sup>1</sup>@1972



**Key learning:**

• Knowledge and understanding

• Self belief

• Confidence

• Communication



# Prior to Japan

**Working: Environmental laboratory ~ 2 years**

***Water and wastewater analysis***



## Key learning:

- Customer satisfaction
- **Minuting**
- **Networking**
- **Report writing**
- **Result oriented**

**Working: Chaudhary Group, Nepal ~ 3 years**

***Corporate responsibility***

***Manufacturing/purchase/Sales & Marketing/HR division***

***Implementation of Quality Assurance plans***

***Analysis of the Business Plan***

**CG CHAUDHARY GROUP**  
*Touching life everyday*

# Why I came to Japan?

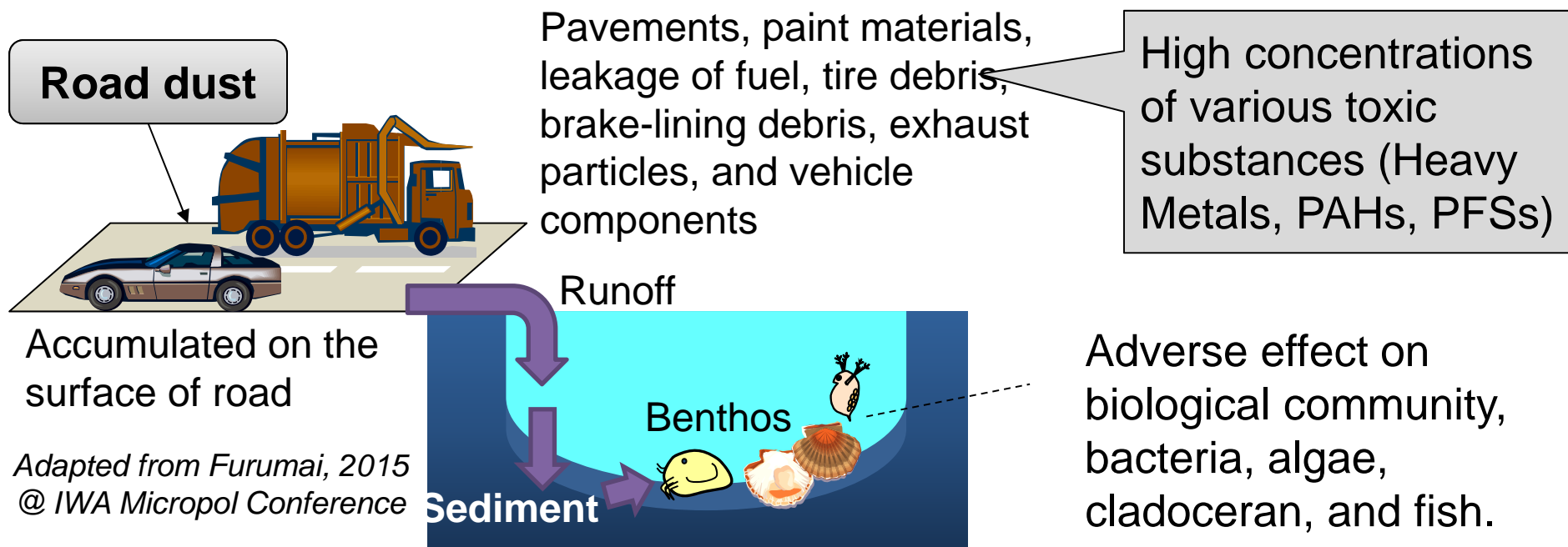
## **MEXT Scholarship – embassy @ 2010**

- **Learn from Japan in mitigating environmental problems - *Food, Water and Health***
- ***Hightech life of Japan, Food, Culture, Travelling...***

## **RECWET / UTokyo**

- **Urban engineering for Sustainable development**
- **Fundamentals of water pollution control**
- **Urban environmental issues**

# Toxicity of urban road dust



Road dust is considered an **important source of sediment contamination**

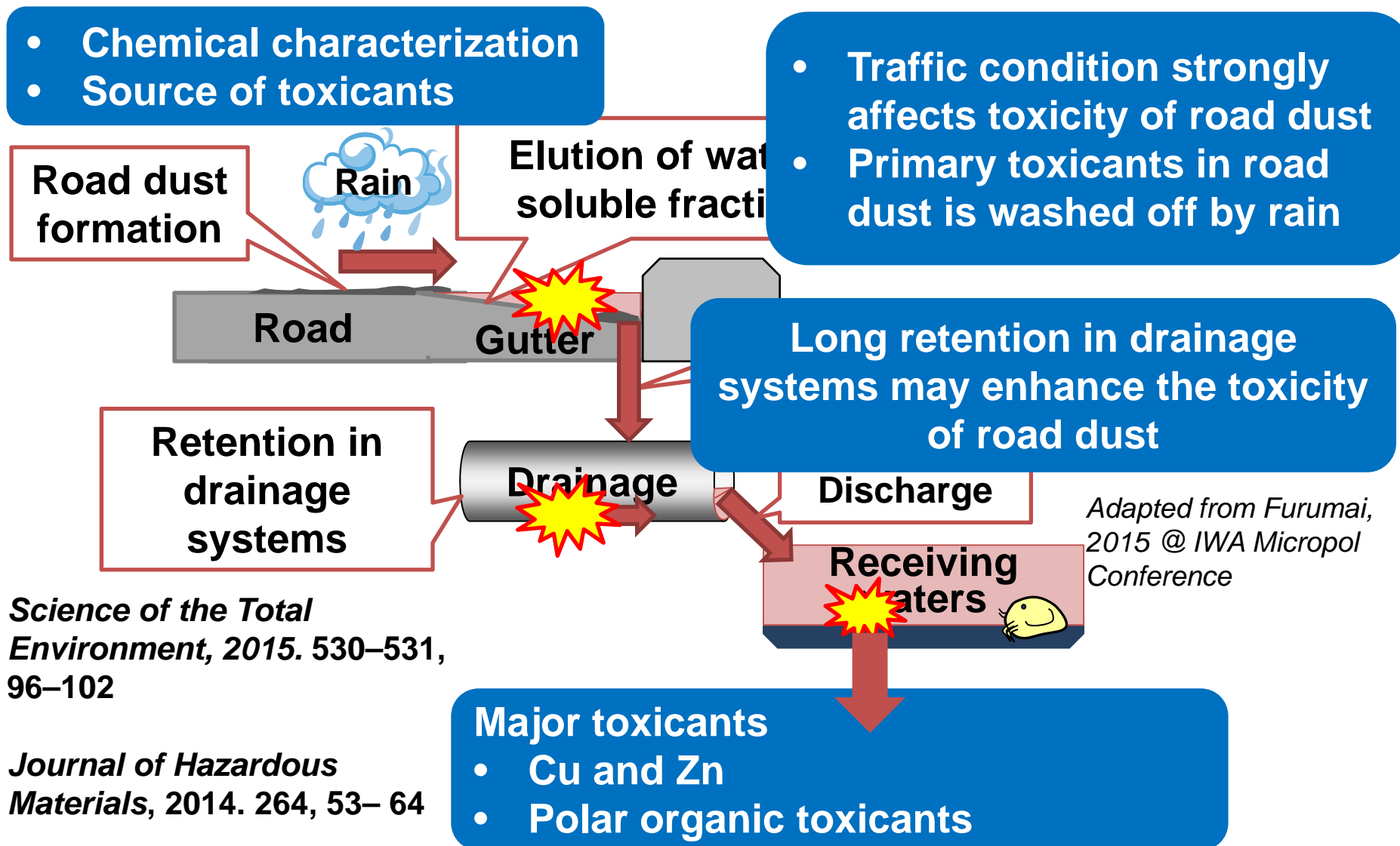


How much does road dust have biological effect on benthic organisms?





# Toxicity of urban road dust



*Science of the Total Environment*, 2015. 530–531, 96–102

*Journal of Hazardous Materials*, 2014. 264, 53– 64

Adapted from Furumai, 2015 @ IWA Micropol Conference

# Postdoctoral experience



- *RECWET meeting and seminars*
- *International symposiums (11<sup>th</sup> and 12<sup>th</sup> SEAWWE)*
- *Laboratory instruments- operation care and maintenance*
- *Independent research*
- *Environmental leadership*
- *Networking*



Street cleaning by reclaimed water



## Environmental leadership



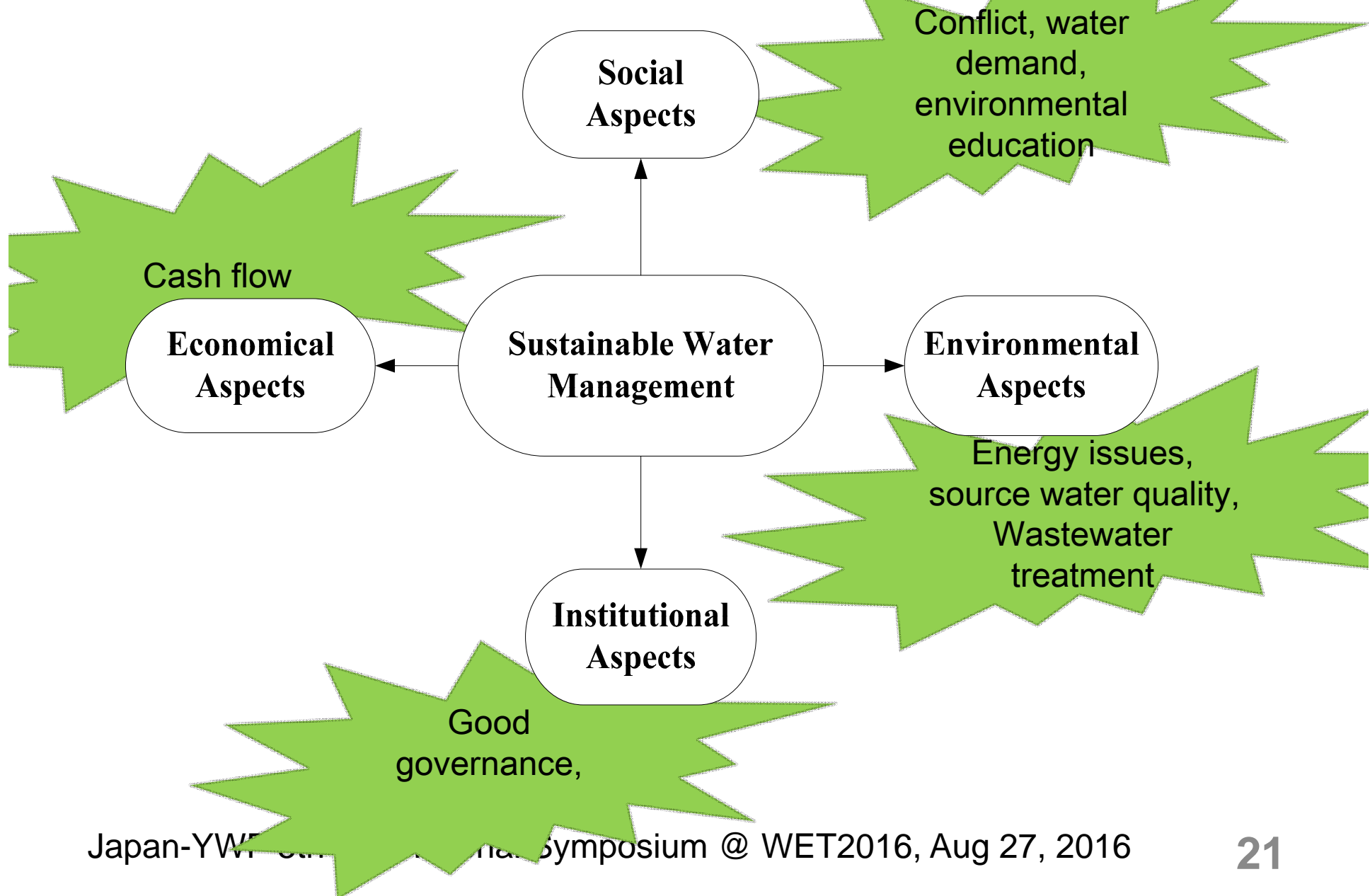
JICA expert briefing telemetering station at Pasak dam



Rain water harvesting

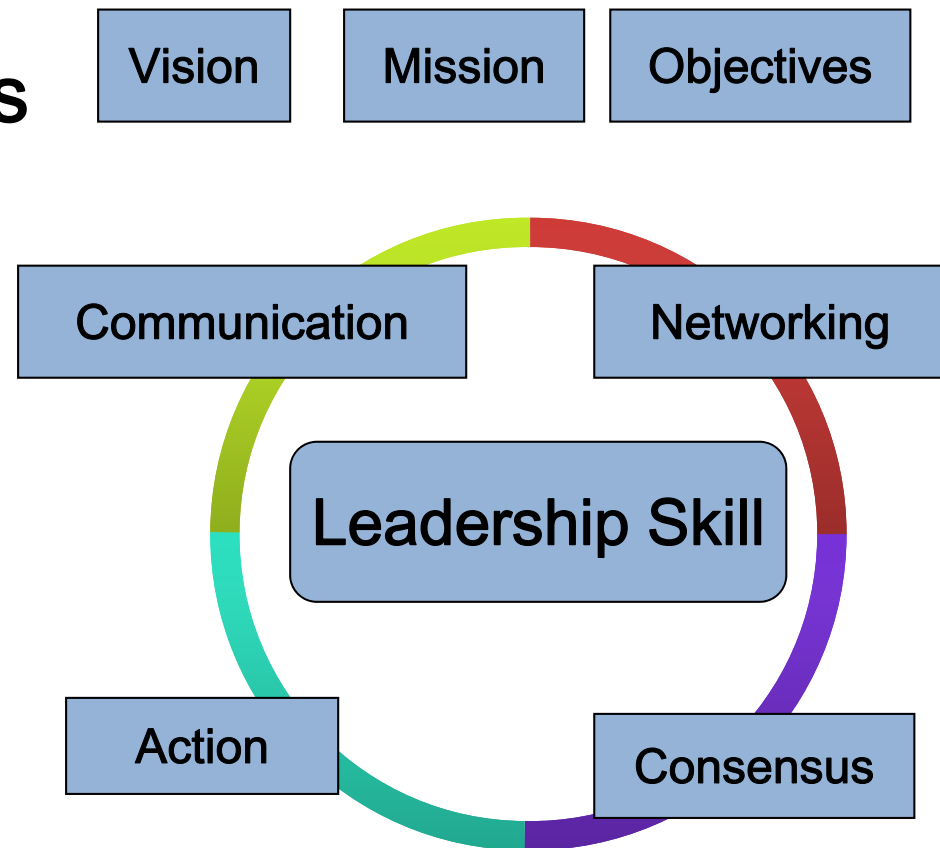


# Environmental leadership

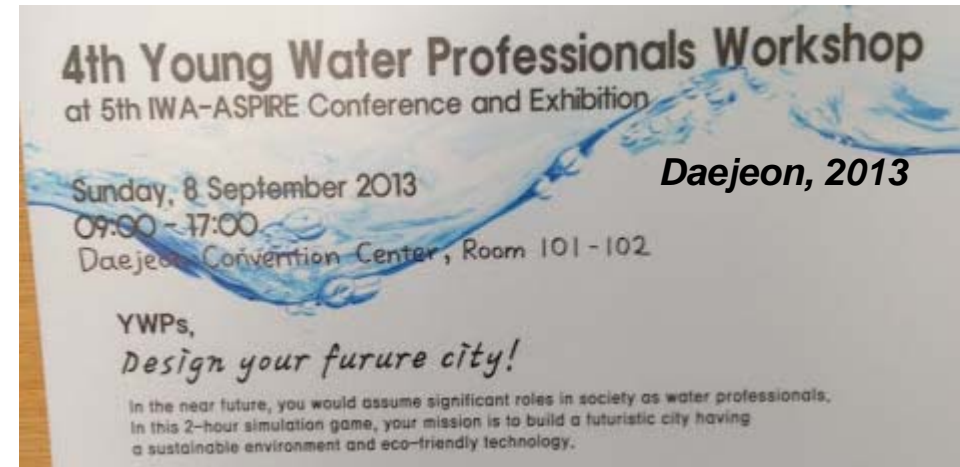


## Skills

- Communication: different nationalities and background
- Visualizing concept
- Initiation
- Background information
- Understanding culture
- Action plan formulation



# YWP activities



## Activities

- **Volunteer as YWP representative in minuting some sessions** - **Elected as YWP representative in Management Committee - IWA specialist group, Assessment and Control of Hazardous Substances in Water**
- **Networking is the key to build relations**



# YWP activities



## Confidence, Q&A

- *What's the best piece of career advice you've ever been given*
- **What** *piece of advice would you offer this group*
- **How** *do you stay current in the water industry*
- **Why** *to get into the water industry, Skills necessary*
- *How important is an advanced university degree, professional certifications?*
- *Do you think it's better to stay in one company or move to other companies. And, how much movement is too much*
- *How important is publication?*
- **When** *you interview someone, how to initiate the environment, what people expect of interview?*
- **Where** *to find the information?*

# YWP volunteering experiences

## 1. Session Co-Chair

- **Unique opportunity** to shadow a leading senior water professional;
- Valuable **experience** and skills gained in chairing;
- **Networking**, recognition and exposure

## 3. Pre-workshop preparation

- **Background knowledge** of workshop
- In contact with Chair in arranging workshop

## 2. Selection criteria

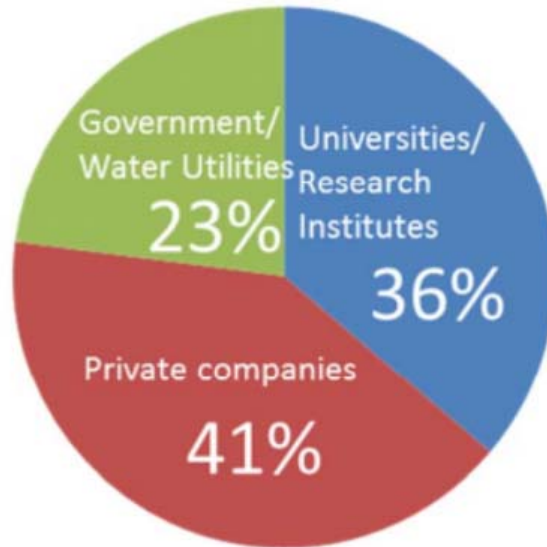
- **YWP member**
- **Enthusiastic and motivated**
- **Available and willing to volunteer time for meetings/tasks as required**

## 4. During workshop

- **Time management for speaker**
- **MC to kickoff workshop**

## 5. Post-workshop

- **Report abstract**
- **Media update, social media update**



**303 members (Oct 2015)**  
**Average age 33 years**

Source, KISHIDA, J-YWP Chair 2015

- ***Established in 2010, very active since then***
- ***Financial support attending conferences – @ IWAASPIRE Daejeon, and IWAASPIRE Beijing***
- ***Mailing list- Sharing information of water-related events***
- ***Newsletter – Job introduction, Networking***



# Travelling



*Kumamoto castle*



*Kinkaku-ji, Kyoto*



*Universal studio,  
Osaka*



*Tsugaike  
Highland Ski area.*

## Advantages

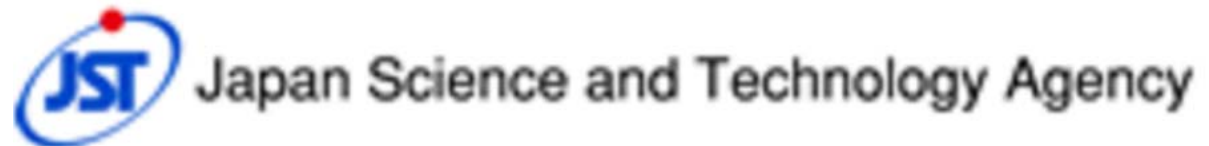
- *Relief stress –personal satisfaction*
- *Exploring new opportunities – food, people, culture, history*
- *Be free and relaxed – no report writing and research*

# Funding source in Japan



Grants-in-Aid for Scientific Research  
Young Scientists (B)

Kurita Water and Environment Foundation  
公益財団法人 クリタ水・環境科学振興財団



Funding Program for World-Leading Innovative  
R&D on Science and Technology

## SMART Proposal

- Specific, Measurable, Achievable, Result oriented, Time bound
- Implication to Society
- Innovation

# Key learning and message to YWP


- **Networking**
- *Never hesitate to ask for **help***
- *Master the local language – **embrace local culture***
- ***Explore** the new opportunities*
- *Make **friends***
- ***Work and family balance***
- *Do with **passion***
- *Never give up*

***Continuous learning is the only way to survive and to grow***



# Arigatou gozaimasu



 Research Center for Water Environment Technology  
School of Engineering, the University of Tokyo

[rajendra.khanal@gmail.com](mailto:rajendra.khanal@gmail.com)

Japan-YWP 5th International Symposium @ WET2016, Aug 27, 2016