

JWF Water Journal

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Thinking about Sus

In September 2015, the Sustainable Development Goals was adopted, and various initiatives started. In an opening dialogue of JWF Water Journal, from the view of "sustainability" as a keyword, Dr. Norihito TAMBO, vice president of Japan Water Forum, and Dr. Kotaro TAKEMURA, chair of JWF Water Forum, talk about the knowledge of those who worked on water and the future of water.

End of the Modern Era

Tambo In 1981, I contributed an article entitled "End of the Modern Era" to "Hokko Kaishi," the journal of the Hokkaido University, School of Engineering. The keywords for the modern era I think are "progress and growth", and they have been supported by huge consumption of resource and energy with advanced technologies. Whatever ideologies you followed, technologies have been supporting progress and growth. In that article, I pointed out that we have no other option but to change the direction of our civilization in order to fundamentally solve the conundrums that await us at the end of the

- Born in Kanagawa in 1945
- Doctor of Engineering (riparian engineering)
- Graduated from Tohoku University with a Master's Degree in Engineering in 1970
- Current and past posts include Chair and Secretary General of Japan Water Forum; Director of Administrative Office for the Miyagase Dam construction; Head of River Department, Chubu Region Construction Bureau; Director of Kinki Region Construction Bureau; and Director of the River Bureau, the Ministry of Land, Infrastructure, Transport and Tourism

Chair and Secretary General,
Japan Water Forum

Kotaro Takemura



sustainability from Japan

modern era, in the finite environmental conditions.

From the standpoint of realizing a sustainable society, my opinion has not changed since then. I believe the problem is that we haven't managed to come up with a basic stance toward changing society as a whole.

Takemura It is a rather surprising subject to address in the height of the era of economic growth. What made you think of it?

Tambo There were too many variables in the multiple equations of the environmental conditions, and I couldn't manipulate them by myself. This made me feel that the situation was left as a free-for-all, because no one could cope with such many variables.

Takemura I guess you could say what you said then precisely because it was uttered from a subjective point of view. There's no way you can check everything if you try to include objective points of view in this matter.

Tambo What is most positive to say, in this ending modern era, is that "progress and growth" is no longer the keywords. In my estimation, the upper limit of human population that can be sustained by the resources and technologies we currently have is roughly 6 billion.

Our only weapon is the technologies but they are basically freeriding on the giants such as René Descartes, Isaac Newton, Albert Einstein, Francis Harry Compton Crick and James Dewey Watson. Those technologies are all useless unless we have an enormous amount of energy at our disposal.

On the other hand, water circulates in a 10-day cycle globally. If the use of water exceeds this cycle, there will be a need to accelerate the cycle by using energy. The real-life example of this is Singapore. Singapore is marching



- Born in Hokkaido in 1933
- Doctor of Engineering (environmental engineering)
- Graduated from Graduate School of Engineering, Hokkaido University with a Master's Degree in Civil Engineering in 1957
- Currently President of the Hokkaido Research Organization
- 89th President of the Japan Society of Civil Engineers
- 2nd President of the International Water Association (IWA)
- His previous posts include 15th President of Hokkaido University and 5th President of the Open University of Japan
- Winner of the IWA Presidential Award for Global Vision (2010)

Vice President, Japan Water Forum

Norihito Tambo

toward the end of the modern era so to speak, and it gives us a glimpse into “how we might disappear when the modern era comes to an end.” On the contrary, Japan is at the spearhead of the overshooting progress and growth.

Uniformity and Diversity

Takemura One of the barometers to help us understand modern Japan is the “long-term population model of Japan” that you have been talking about for a long time. I view the period from 2008, the population peak of Japan, as the period after the modern, i.e. the post-modern era.

I was born in 1945, so I really am a child of the modern era. I kept climbing to its peak, meaning I have been working under the pressure to expand all through my life. The more the people, the less the sources. My selling point was to be able to come up with something that didn't exist before with limited time and budget.

Tambo My generation is the same.

Takemura The keyword here was “efficiency,” or

increasing productivity in other words. This efficiency can be divided into three parameters: per person, per unit time, and per unit space. The only thing our generation could do to increase these parameters was to aim for “uniformity”: making the same things over and over again like a robot. To increase productivity per person and per unit time, we invested energy into speeding things up. And to increase productivity per unit space, we concentrated manpower and goods on urban and industrial areas. In short, I think the drive toward increased productivity per person, per time and per space represents the modern era.

Let's think about the opposite of this way of thinking. The antonym of “uniformity” is “diversity.” This means not expending energy by sacrificing the productivity per unit time. This is to say that production is done according to the natural flow of time. The opposite of increasing productivity per unit space by focusing on urban areas is dispersal to local cities.

Assuming the fundamental keyword of the modern era is “expansion,” then we say the keyword of the next era is “contraction.” As soon as this word is uttered, everyone stops listening to you! “Contraction” doesn't seem to strike a chord with anyone at all.

So instead of talking about the expansion of the modern era as a whole, I have been expressing these ideas with more specific keywords: I decided to assert that respecting diversity, not expending energy and making dispersal is what will become necessary in the era that comes after the modern era. Indeed, these are the sustainable measures. Recently, I feel I can finally express in my own words what you have been saying since 1981.

Diversity is the state of being diverse. From one initial line, many lines diverge. In the Japanese language, the result of divergence is called “diversity.”

Tambo So it is whether you see it as dynamic or static, I suppose.

Takemura Undoubtedly, the evolution of living organisms is a case of divergence. Perhaps then, the path we followed in the modern era when everything went toward unification in cities could be called retrogression.

Solar Energy and Water

Takemura In summarizing the post-modern era, the antonym of “expansion” is “sustainability.” I think the keywords to realize this idea in more practical ways are “gravity” and “bioenergy.” If we can maximize them, there are still lots of other things we can do.

It is essential that we use the natural energy derived from gravity and bioenergy as much as possible. The reality of modern cities represented the total opposite of using gravity. And I feel bioenergy contains unlimited power to combat the environmental problems.



TAKEMURA

Tambo After all, both gravity and bioenergy come down to solar energy at roughly 1.8 kWh/m². If we use trees as biomass energy, it would take 50 years to return to its original state in the first place, so this is carbon-neutral with a 50-year cycle span. The problem of the modern era is that we are using up fossil fuels that have built in a hundred million-year in just 300 years.

The resources we can use is not stock but flow, and only solar energy can really be called the resources of flow. So we must learn to operate within the limit of solar energy.

I do believe being sustainable is to be self-sufficient locally by fully cycling food, energy and water, much like the dispersal model you mentioned. However, we won't survive this way. Humans will start fighting if we weren't connected with each other. To survive, we have to connect with the outside world through networks. The electronics information type network will play a significant role in the post-modern era. This type of network is quite resistant to human intervention and it doesn't use much energy either.

There are only 100 million people in Japan but there are 7 billion in the whole world. The knowledge of the 100 million and that of the 7 billion are different. To coexist, it is vital to globalize information. Moreover, being self-sufficient locally should help reduce the reasons of those fights.

Takemura It may sound like a kind of sophistry by a water expert, but the eldest son of solar energy is water. Water circulates. When things circulate, water acts as the medium. Energy, life and minerals – water acts as the medium for all of them. This is the concept of water circulation. We should be speaking out and cheering ourselves that the next mission is to create places with low energy consumption helped by water cycle.

Tambo I agree with you. We can say with confidence that water cycle is the basis.

Takemura Throughout our Japanese archipelago, there are innumerable rivers, and using water for us is in fact to follow the dispersal model. I don't think any other countries in the world can distribute water as fairly divided by the units of river basins as in Japan. No other country could equally furnish their residents with prosperity of water resources than in Japan.

Mt. Fuji and Mt. Sinai

Tambo I'd be useless in predicting the future of "Tokyo," but I think I have a fair guess as to what might happen to "Japan excluding Tokyo." The outcome of predictions would rely on whether a given river basin can become self-sufficient in terms of water, food and energy. There is absolutely no way that Tokyo could become self-sufficient.

Also, there's a difference between cities and rural areas:

in cities, you can make a living even if you can only do one thing. For example, in cities you can survive even if you can only work with computers, but in rural areas of Hokkaido, you can't make a living with just computers. You can, if you can raise cattle and use computers. In rural areas, you need to have composite abilities. But we don't have a system to reward such composite abilities in the modern era.

We also need to face the limitations of gravity and bioenergy as you mentioned. These things are difficult to bring off in megacities, and if too many chemicals are involved, biological treatment would also become difficult. This is precisely the reason why I said I could predict what might happen to Japan excluding Tokyo, although Tokyo's future is no one's guess. Sustainability is about re-inventing our system into one that is based on circulation and coexistence.

One of key characteristics of gravity and bioenergy is that it takes time. This is why we need to reduce our population. The upper limit of the global population is around 10 billion. It is a deplorable logic that we must increase the birth rate because there won't be enough young people to support the pensions of the elderly. We won't have the capacity to support the growing population in the era of vanishing resources, namely energy, water and food won't be guaranteed for us.

Takemura After all, the decline in population might not be such a bad idea as the global environment and the restrictions on resources are expected to become severer.

Tambo There's nothing to worry about population decline if we can change the system. It is just that we simply won't be able to sustain ourselves if we keep going with the current system.

Takemura It is obvious that the population of Japan will keep shrinking, and everyone is aware that what we would face as a nation is not "progress and growth" and that we are going down the hill. We are at the top of the rollercoaster, scared and controlled by this fear, so under such circumstances we cannot make a clear statement.

I've been thinking this has something to do with the huge influence of Mt. Fuji over Japanese people. It has a beautiful peak and stands alone. You can climb up, admire the sunrise, and then climb down. The purpose of climbing Mt. Fuji is to stand on its peak.

The Jewish mathematician Mr. Peter Frankl, who is well known in Japan, once said something quite interesting to me: "The Jews climb down a mountain to go up another one." This must be the image of Mt. Sinai – with continuous rugged peaks. Hearing this, I felt ashamed: the Japanese must discard the image of Mt. Fuji.

In the coming era, we will face extremely restricted resources. Climate change will continue for a few centuries. With the view of these next mountains we must

climb, we have to go down from the peak on which we are standing right now. We need to climb down so we can go up another. We should never be afraid of our declining population.

Tambo I completely agree with you. In our ten thousand years of history since JOMON Period, the Japanese are standing at the top of the world for the first time. Until now, we were chasing China and then Europe to achieve success. But as soon as we reached the top, we lost our own bearing. Looking through the long history of the Japanese archipelago, it seems to me as if we Japanese are being stunned by being at the top of something for the first time.

After thinking long and hard about where we may be going toward, I think the answers are reemerging, at least to me, concerning rural areas. One of them is dispersal as you mentioned, and the globalization assisted by the information-related networks interconnecting the rural areas is the other. Building a system to reward the composite abilities of single individuals would lead us to create values in the next era.

For me, a civilization where value creation ability itself is a value is just an interim measure. We'll probably experience a few decades from now, in which, as long as we can create the new values, such values would create another value, though we may not know to where we are going. Then in the era that will replace the modern era, the value that comes out on top of the others will become the stable value for the time being, and the 22nd century will open its door.

The 21st century will be the century in search of values. And I think everyone is aware by now that such values won't mean to push the GDP up.

Reflecting on the Vocations in the Modern Era

Takemura I had a long career in the administration as a dam builder. I built three mega dams: Kawaji, Okawa and Miyagase. What I concern as a dam builder for the coming era is that dams are not utilized effectively. How to use the existent facilities effectively: this is the most important point for the coming generations.

One of the utilizations is for energy. In 1957, the Law on Specified Multipurpose Dams was enacted. This law was influenced by the Toya-Maruru Disaster in 1954. With the weather forecasting technology of the time, it was impossible to predict the paths of typhoons. The framework of this law was designed with the resolve that the purpose of dams to control floods must never be failed. So to this day, with the assumption that "this year, once-in-a-century deluge will be upon us," all dams throughout the country still await this deluge with their

water levels lowered.

Even though weather forecasting technology has progressed and now the paths of typhoons can more or less be predicted, the same measures remain in place. What I am trying to say is that, they should really think about storing water in at least 1/3, if not half, of those empty flood-control capacity spaces. Its reserve energy potential is massive: we would be able to secure energy without building new dams.

Another thing I want to point out is the discharge after heavy rain. It is too wasteful to discharge immediately after rain to lower the water level. In addition, a sudden discharge raises a risk when the embankments downstream are weakened. Unless two consecutive heavy rainfalls are forecasted immediately, I would suggest the water to be discharged gradually and fully utilized for power generation.

The stored water should be used for ensuring power generation, and the water for this purpose should come from the locations where the flood-control water level limit has been reached. Have the courage to do so, as we do have the technology to support the courage! This is my current belief and my wish is that "the younger generation should change the dams built by, us the older generation."

Tambo I was involved in the world of education and I came to believe the power of accomplishment in everyday activities. Schools have their limits. The ones who were taught well are now in the posts they deserve, though I do have to admit there are some students who became too cozy within the ready-made system in their posts.

Takemura It is difficult to strike a good balance between one's loyalty to his/her organization, and giving instructions at your own conscience and discretion after you have gone up the ladder. It is important to serve your organization sincerely, yet you can't stop there. This is certainly not an easy time for those who intellectually try and error, agonize and consider, to climb up to the top.

Tambo And sometimes those who shouldn't be in a leading position are leading.

Takemura Whether or not you are thinking "I'd realize this thought when I get to the top" while at the same time always retaining your loyalty to the organization. I remember those days, around three decades ago, when there were many such forerunners.

Tambo I feel every person who made historical changes to any organization had such mind.

To the "Water Experts" of the Future

Takemura From my experiences, only social engineers can discuss society from macro perspectives. To be more specific, even among social engineers, especially those who work with water.

Tambo I agree that it's the river experts' job to watch over the country as a whole.

Takemura Each and every river expert has been wrestling with one's own river throughout the country. Those who struggled against rivers for the control and the use of water are a diverse group of individuals. Their individual attributes and their ideas are really heterogeneous, as they are all heavily influenced by the rivers and lands with which they have lived their lives. However, in the end, this diverse bunch of people shares the ideal image toward a safe and sustainable country.

Tambo The capacity to solve problems that continue to pile up is crucial for social engineers, and especially "water experts." I guess what you are talking about is the direct consequence of their vocation.

I'm afraid we won't be producing this kind of water expert in the future, as each individual is far too preoccupied with one's narrow field of expertise. Even if you look around the field of environmental engineering, which is my specialization, there are specialists on individual phenomena but there are hardly any environmental engineers who can comprehend the gamut of the entire system. I suspect this is one of the signs that the modern era is coming to an end.

Takemura What I ask of the water experts of the coming generations is to voluntarily tackle the problems. I think those who encounter a situation such as being able to resolve truly pressing water problems in a developing country are really fortunate. It is a wonderful thing to have a chance to think about and socially implement the traditional, old technologies of our forerunners, instead of the specific, large-scale, contemporary technology.

So if you ask me what sustainability is, my answer is that the generations after ours and the ones following them can continue to benefit from the similar living standards to ours, if not completely identical, but being able to maintain a minimum level. If so, the population decline is a godsend.

In the future, our true water problems will be closing in.

Tambo I agree. As I live in a local district, I feel Tokyo's extravagance quite strongly. I imagine the barometers for this extravagance will also start to shift. We need to climb a mountain that is different from those we've climbed before. It has a different value. But I believe it will be truly worth doing so.

Takemura I'm repeating myself here but water is the best child of the sun. It is so wonderful to talk about various things associated with water as a result of our engagement in and thoughts about water matters. It is of paramount importance and also fortunate to organize your work and ideas with water as the keyword. I hope more and more young people would become interested in the field of water.



TAMBO

Tambo I hope more people would start studying water as a kind of civilization accompanied by technologies. Words without technologies are mere emotions. It is important that technology lies at the base. Although possessing an international viewpoint is now a prerequisite, I hope they would be able to avoid falling into formalism and conventionalism.

Trends of efforts based on the Basic Act on Water Cycle and Basic Plan on Water Cycle

The Headquarters for Water Cycle Policy, the Cabinet Secretariat

1 Regarding the Basic Act on Water Cycle and the Basic Plan on Water Cycle

Water is the essence of life, incessantly circulates around the earth, and has been offering a lot of benefits to diverse ecosystems, including humankind, while interacting with other natural components of the environment, such as atmosphere and soil. However, water cycle has recently changed due to various factors, including the concentration of population in urban areas, changes in industrial structures, and meteorological fluctuations caused by global warming, and then we witnessed the emergence of many problems, including drought, flood, water pollution, and effects on ecosystems.

Based on this, it is indispensably important to renew the acknowledgement of water as a common asset of humanity and implementation of measures to maintain and/or restore the sound water cycle in order to circulate water soundly and elicit continuous benefits from water. Accordingly, the Basic Act on Water Cycle was enacted in July 2014 and the Basic Plan on Water Cycle based on the law was adopted at a Cabinet meeting in July 2015, for the purpose of promoting water cycle measures comprehensively and consistently.

The objectives of the Basic Act on Water Cycle are to specify the basic principles for water cycle measures, clarify the obligations of the national and local

governments, enterprises, and citizens, design basic plans for water cycle, stipulate the fundamental items of water cycle measures, establish the Headquarters for Water Cycle Policy, promote water cycle measures comprehensively and consistently, and then contribute to the healthy development of economy and society and the sound improvement of human life.

2 What is river basin management?

Concept of comprehensive and integrated river basin management does not mean basin-wise management by a single administrator, but the collaboration of related personnel to maintain or improve the natural environment relating to human activities and the quantity and quality of water in forests, rivers, farmland, cities, lakes and coastal areas through water cycle measures. This is known as the "River Basin Management" in the basic plan. As local communities lead the way in promoting the "river basin management" according to the actual situation of each region, the "River Basin Water Cycle Council" should be established in each river basin to promote creating a "river basin water cycle plan".

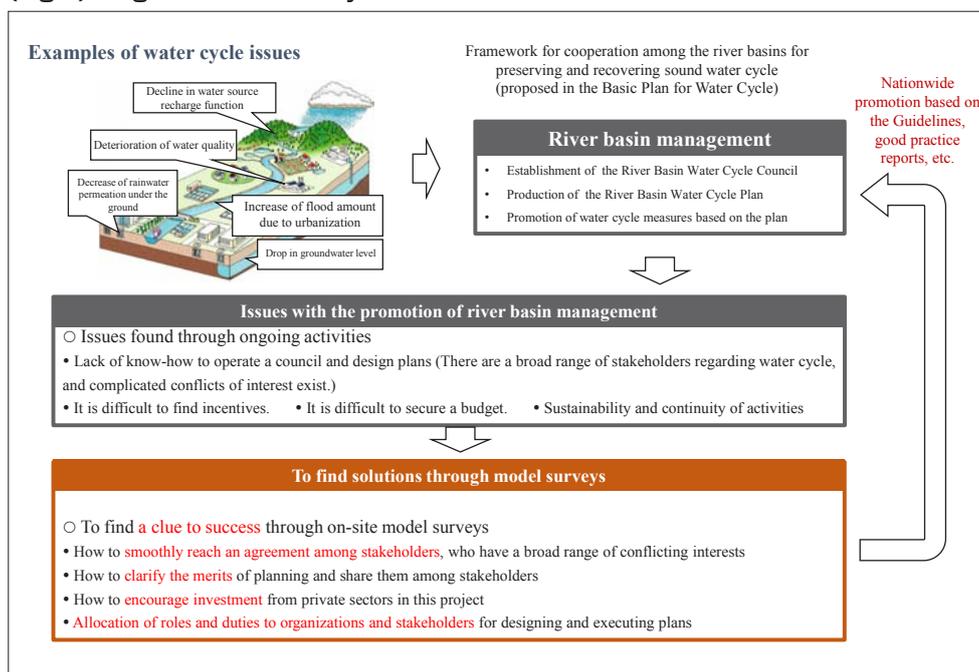
3 Efforts for promoting river basin management

We have implemented the following measures for promoting river basin management.

《Production of guidelines and good practice reports》

We produced a "Guideline for Developing and Promoting the River Basin Plan", which understandably explains the basic policy for establishing and operating the River Basin Water Cycle Council as well as for developing and promoting the river basin water cycle plan, including examples of planning procedures for the plan, as well as a "Good Practice Report for Water Cycle Plan" which reviews advanced efforts in this regard, and made them publicly available. There

(Fig. 1) Image of model surveys



will be more enhancement and improvement by adding the outcomes of model surveys and other hints.

《Release of the white paper on water cycle》

Article 12 of the Basic Act on Water Cycle (Act No. 16 of 2014) stipulates that Government shall submit an annual report on measures taken for the water cycle to the Diet every year. In May 2016, the “Water Cycle Measures in fiscal 2015” (the first white paper on water cycle) was adopted at a Cabinet meeting, and released in July 2016. The water cycle measures in fiscal 2016 will also be reported around that month.

《Implementation of model surveys》

In order to implement water cycle measures effectively, the Headquarters decided to select groups that conduct advanced river basin management, support their activities, and carry out the first survey on model activities by collecting, analyzing, and summarizing the cases of river basin management to be used as reference (Fig. 1). In fiscal 2016, We publicly invited cooperative groups in this survey for the purposes of (1) conducting collaborative measures involving various organizations for securing water resources, including the maintenance and improvement of water storage and recharge functions, and (2) education, enlightenment, publicity and diffusion of

the information on water cycle in cooperation with local staff as a start for model surveys. Among applicants, we selected 3 organizations as surveying groups (Table 1), supported their activities, and conducted model surveys.

《Approval for for River Basin Water Cycle Plan》

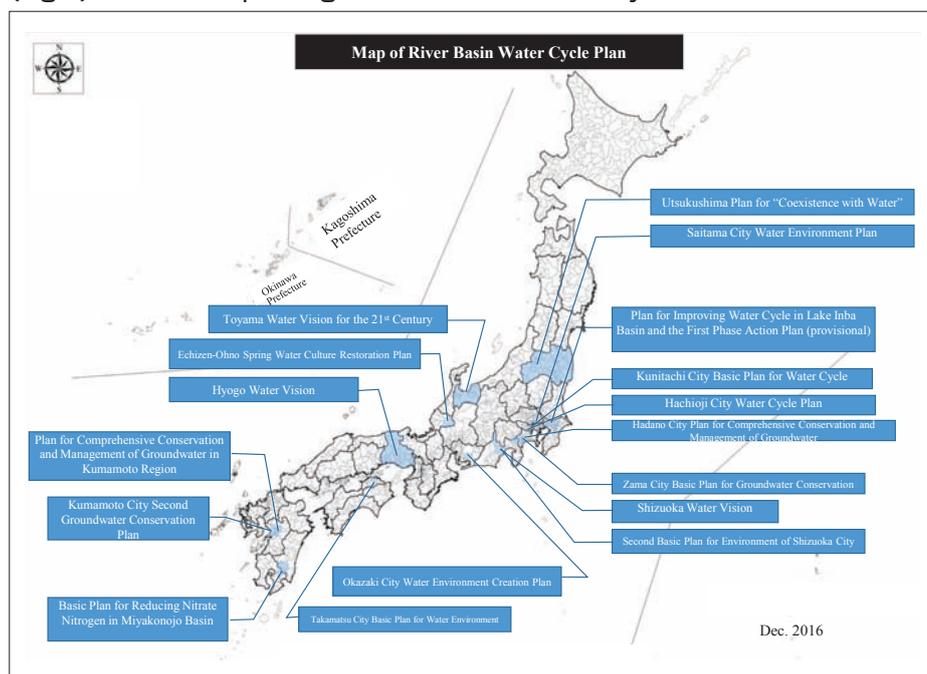
For the purposes of grasping the situation of river basin management in each region and further diffusing and energizing related activities, the plans regarding water cycle, etc. produced throughout Japan were confirmed, approved, and publicly disclosed as “River Basin Water Cycle Plan” for the first time in fiscal 2016. Organizations developing plans throughout the nation submitted their plans by the last day of November 2016, the deadline of the first project, and as a result 17 plans were selected and approved to meet the requirements for the River Basin Water Cycle Plan (Fig. 2).

4 Activities from now on

(Table.1)Organizations that conducted model surveys in fiscal 2016

Organization	Municipality that applied for this project	Outline of activities
Fukushima Prefecture Council of Personnel Involved in Water Cycle Measures	Fukushima Prefecture	To divide the prefecture into 3 regions, and produce more detailed plans utilizing regional characteristics.
Okazaki City Council for Promoting Water Cycle	Okazaki City, Aichi Prefecture	To propose new measures regarding "the volume of water" and discuss their expected results.
Kumamoto Ground Water Foundation	Kumamoto Prefecture	To improve the system for grasping the behavior of groundwater through data analysis, and reflect it into more effective measures.

(Fig.2)Plans corresponding to “River Basin Water Cycle Plan”



In fiscal 2017, the target range of model surveys will be expanded, and symposiums about river basin management and the development of information bases, such as websites, are scheduled. Through these activities, practical information will be offered to local communities that plan to conduct the river basin management, so that they will be able to engage in river basin management more actively.

River basin management is jointly conducted by various elements, including each and every citizen. Therefore, we will take measures for promoting educational activities for deepening citizens' understanding and awareness of the importance of sound water cycle, while focusing on Water Day on August 1.

World Water Day in Tokyo 2017 Water Conference for Future



On February 22nd, the JWF hosted a symposium entitled World Water Day in Tokyo 2017, Water Conference for Future. This is the second year since the SDGs were established. It is essential that a variety of players work together towards achieving the SDGs and solving other environmental issues. World Water Day in Tokyo 2017 focused on companies as important players. Companies are our partners in building sustainability. In order to consider the roles of companies, we focused on the trends of ESG (environment, society and governance) investment. From that perspective, we confirmed that it was important for companies to tackle environmental issues as part of their business strategies.

Program

- **Opening Remarks** Dr. Kotaro TAKEMURA (Chair, Japan Water Forum)
- **Remarks** Ms. Yuko NAKAGAWA (Chief of the Secretariat of Special Mission Committee on Water Security Strategy and member of the House of Representatives)
Mr. Takashi IGARASHI (Director, Water Resources Department, Water and Disaster Management Bureau, MLIT/Secretary General, Cabinet Secretariat Headquarters for Water Cycle Policy)
- **Special Address Sustainable Development Goals (SDGs)-Japan's Efforts-**
Mr. Mikiyo MORI (Deputy Director General, International Cooperation Bureau, MOFA)
- **Presentation**
Ms. Natsuki SASAKI (Consultant, Environment and Energy Division 2, Mizuho Information & Research Institute, Inc.)
Dr. Michiyo MORISAWA (Japan Director, CDP)
Dr. Youhei KANEKO, (Vice President, Corporate Sustainability-Ecology, Kao Corporation)
Prof. Taikan OKI (Senior Vice-Rector, United Nations University/Professor, Institute of Industrial Science, The University of Tokyo)
- **Panel Discussion "Working Together to Build Sustainability"**
Facilitator : Prof. Taikan OKI
Panelists : Dr. Michiyo MORISAWA, Dr. Youhei KANEKO and Mr. Masahiko SHIBATA (Senior Consultant, Environment and Energy Division 2, Mizuho Information & Research Institute, Inc.)

Organizer : Japan Water Forum (JWF)
Supporters : Ministry of Foreign Affairs (MOFA) ,
Ministry of Health, Labour and Welfare (MHLW)
Ministry of Agriculture, Forestry and Fisheries (MAFF)
Ministry of Economy, Trade and Industry (METI)
Ministry of Land, Infrastructure, Transport and Tourism (MLIT)
Ministry of the Environment (MOE)
IWA Japan National Committee
Japan Society of Hydrology and Water Resources
Water Security Council of JAPAN (WSCJ)
Funding Support : The River Fund of the River Foundation, Japan
Date : Wednesday, 22 February 2017
Venue : Multipurpose hall, First Members' Office Buildings of the House of Representatives, Tokyo



Mission Statement of Water Conference for Future 2017

Commemoration of UN World Water Day: Water Conference for Future 2017

Organized by Japan Water Forum (JWF)

Date / Time: Wednesday, 22 February 2017 / 14:00 – 17:00 (open 13:30)

Venue: Multi-purpose Hall, First Members' Office Buildings of the House of Representatives, Tokyo

Since the start of the 2030 Agenda for the Sustainable Development Goals (SDGs) closely associated with domestic and international water issues in 2016, unlike the Millennium Development Goals (MDGs for 2000-2015) with the principle objective of promoting progress of developing countries, it has provided a comprehensive framework for all nations including developed countries to achieve the 17 Goals that are interrelated each other. Within this framework, the value proposition of water issues was changed in a way that not only was the Water and Sanitation treated as an independent goal, but various water issues such as water shortage, aqueous environment and disasters were incorporated into and addressed throughout SDGs.

Under such circumstances, the participation and mutual cooperation of various parties concerned as well as contributions from private sectors, especially enterprises with unparalleled influence in today's economic society, that play central roles in accelerating the problem-solving process are crucial to solve water-related environment and societal issues for the achievement of the SDGs. The recent trend of growing interest in the investment on Environment, Society and Governance (ESG) grounds is also noteworthy. Since the UN proposal of the Principles for Responsible Investment (PRI) made in 2016, many enterprises have been incorporating the ESG factors into their performance indicators aside from their financial information.

This means that the private sectors' initiatives towards the ESG issues have become part of their business strategies, not just as their corporate obligations and responsibilities. As water accounts for a large part of the Environment factor of ESG, the improvement and conservation of the water environment and the preparedness for drought and flood are seen as active elements in assessing the overall value and productivity of the enterprise. Furthermore in 2010 Carbon Disclosure Project (CDA), an international organization based in the UK, launched the program on behalf of institutional investors that requests leading companies in the world to disclose their water-related information of business strategies, risks, opportunities and the like.

Though in the past enterprises were valued mainly based on their financial performance, as the enterprises' mode of existence in the society and their value proposition are changing, so do the society and people's lifestyle eventually. Therefore, we must be able to understand, work together and support enterprises' efforts in addressing the ESG issues, so that we can create a new future society with plenty of opportunities.

While it is enterprise's task to pursue their business with the idea of combining business and environmental interests in mind producing synergy effects rather than merely striking a balance between their business and the environment, such corporate attitude will be highly valued by consumers and investors. We believe this kind of interrelation between the private sectors and the society is indeed a key to build a sustainable society.

Presentation

Tidal current to SDGs and water



Prof. Taikan OKI

Senior Vice-Rector, United Nations University
Professor of Institute of Industrial Science, the University of Tokyo

The percentage of those who cannot access safe drinking water was 24% of the world population of 5.3 billion people in 1990, and dropped to 11% of the population of 6.9 billion people in 2010. The initial goal of halving the percentage by 2015, which is one of the United Nations Millennium Development Goals (MDGs) regarding water, has been attained earlier than expected, and the percentage decreased to 9% of the world population of 7.3 billion people in 2015. This is not only attributable to the setting of the MDGs, but also because the economies of India and China had grown considerably since 1990, and water infrastructure has been improved there.

The international development goals in the 1960s were quantified with financial aid amounts, but Development Assistance Committee of Organization for Economic Co-operation and Development (OECD-DAC) started setting goals as its new strategy in 1996, to which Japan contributed considerably, and the MDGs followed this trend.

In the post-MDG discussion, it seems that they discussed whether to put importance on the environment or the economy and whether to prioritize the reduction of poverty or the development. As a result, United Nations Conference on Sustainable Development (Rio+20) held in 2012 set sustainable development goals (SDGs) for the international agenda till 2030, in succession to the MDGs, by adding development goals related to the MDGs to “The Future We Want,” which is rather an environmental goal.

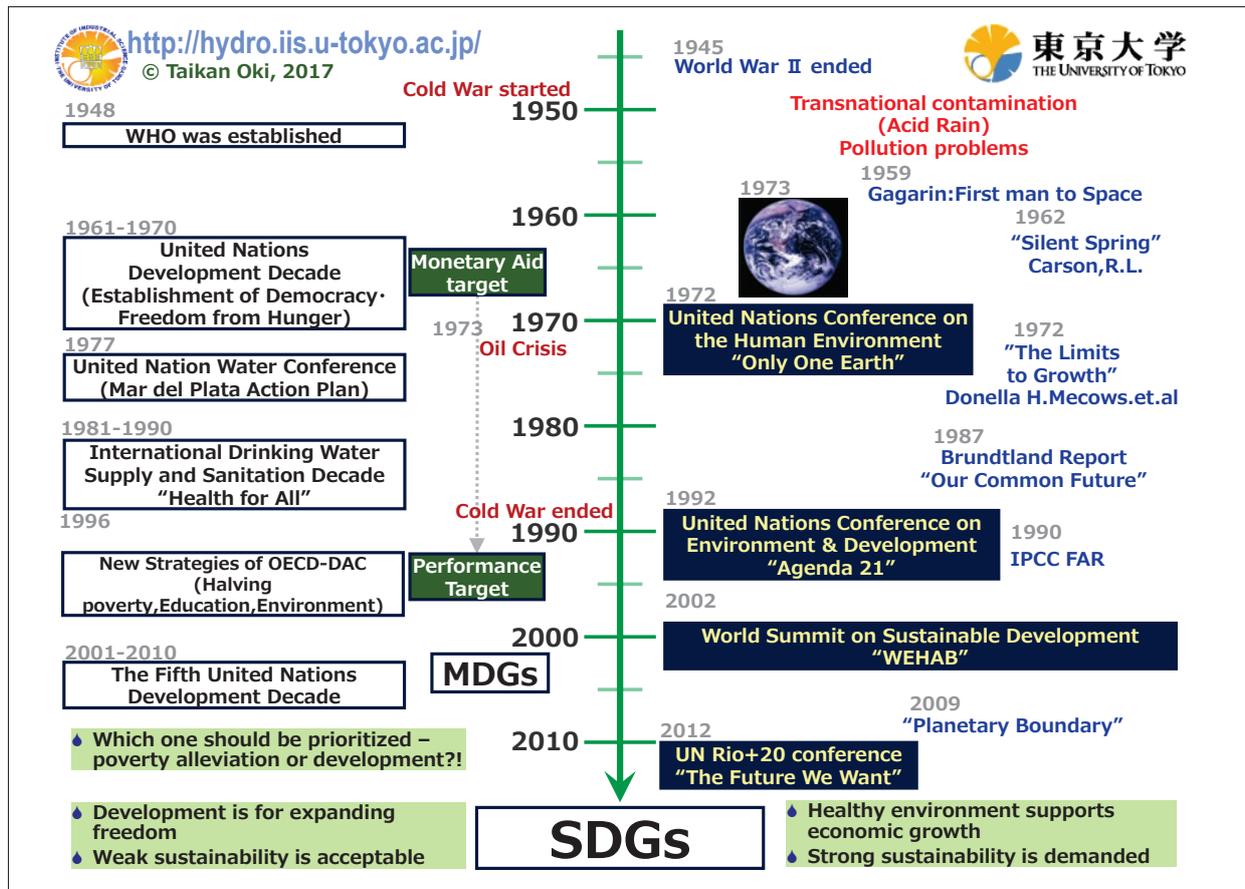
Consequently unlike the MDGs, which are realistic and attainable goals, the SDGs, which uphold the idealistic philosophy: “We won’t leave anyone behind,” include three factors such as ethics, economic growth, and environmental conservation.

In water-related activities for attaining the SDGs, it is essential to educate people about the necessity to not merely save water, but also reduce the negative effects of water use on the environment and the importance of enabling those who cannot use water sufficiently to use a necessary amount of clean water at low cost, rather than restricting the overuse of water.

For global enterprises, the activities for attaining the SDGs are indispensable in continuing their business, rather than charity, social contribution, or cost. On the other hand, for long-term investors’ points of view, whether a company takes some measures for achieving the SDGs is an essential information for judging whether or not to invest in that company.

It is not necessary to tackle all of the SDGs or prioritize some of them. We believe that the SDGs value lies on its indication that there are a variety of approaches to pursue the global peace and happiness. It is important to achieve sustainability while comprehensively considering the economic, social, and environmental fields and taking the SDGs greatly into account.

International trend until SDGs adoption



17 targets of SDGs, by division of ethics(society) and economy(development) and environmental(Conservation)



Toward the 3rd Asia-Pacific Water Summit

— Water Security and Sustainable Development Goals(SDGs):

Secretariat of The Asia-Pacific Water Forum/Japan Water Forum

The Asia-Pacific Water Forum (APWF) , for which Japan Water Forum (JWF) serves as secretariat, is currently preparing for the 3rd Asia-Pacific Water Summit (APWS) .

APWF is an international issue network of institutions that make efforts to improve water security in the Asia-Pacific region, and organizes APWS.

APWF has hosted two APWSs (the first

in Japan in 2007; the second in Thailand in 2013) , inviting top officials from the Asia-Pacific region and suggesting policies for human security and sustainable growth from the viewpoint of water-related issues, which has deepened mutual cooperative relations, and promoted each country and the international community to take action.

Meanings of the 3rd APWS

The 3rd APWS is the first water summit after sustainable development goals (SDGs) were adopted at the U.N. General Assembly in September 2015. The purpose of holding the 3rd APWS is to promote the top officials from the Asia-Pacific region as well as the international community to take specific actions for achieving the SDGs.

Especially, the Asia-Pacific region is facing with common and serious water issues, such as water shortage, water quality deterioration, and flood risk augmentation, because of the rapid urbanization and economic growth. These are the external diseconomies which inhibit sound development. Furthermore, a water disaster often hits the Asia-Pacific region, taking away the lives of people, which accounts for 80% of casualties caused by the water disasters in the world. From the viewpoint that solving these problems will lead to the sustainable growth of local communities and the attainment of the SDGs, the 3rd APWS will be held with the following objectives:

- To share the recognition at a high political level that it is necessary to take appropriate measures against water issues before they become apparent during the processes of rapid urbanization and economic growth.
- To share useful knowledge and experience in the region, in order to promote specific measures to be taken for solving the water issues, sharing especially Japan's past bitter experiences (water issues that occurred during the high economic growth period) as well as how we managed to overcome the issues and the technologies we used to cope with them.

In the Asia-Pacific region where urbanization and industrialization are rapidly proceeding, we have a broad range of water issues, such as water resources

management, access to water and hygiene, drainage treatment, irrigation, hydroelectric power generation, water channels, and measures against water disasters. APWS provides an opportunity to promote smooth and sustainable development without repeating past failures of other countries, by sharing previous cases and know-how for the sustainable water resources management in the Asia-Pacific region.

Assumed outcomes of the 3rd APWS

The 3rd APWS aims at sharing the knowledge, experiences, technologies, know-how, and the paths for attaining the SDGs, so as to promote leaders from every field of business, including the national leaders in the Asia-Pacific region, to deepen their recognition of the relation between water and sustainable developments, share the determination to solve the problems, and take specific actions to cope with them.

Outcomes of the 3rd APWS will be scheduled to be shared at other international conventions such as the 8th World Water Forum (March 2018 in Brazil), the Singapore International Water Week (July 2018 in Singapore) and the 11th International Water Association (IWA) Congress & Exhibition (September 2018 in Japan).



The 2nd Asia-Pacific Water Summit
Chiang Mai, Thailand

System of APWF

- APWF: APWF is a loose issue network that upholds the concept of “independency and non-profit activities”, involving international and local institutions, academic organizations, NGOs, etc. related to water issues in the region, and promotes the leaders in each field of business, including the top officials in the Asia-Pacific region, to deepen their recognition of water issues, allocate their resources and take concrete actions to solve the problems concerning sustainable development

- President:

Yoshihiro Mori, the former Prime Minister of Japan, President of Japan Water Forum

- Chairman:

Ravi Narayanan, former CEO of Water Aid and International Mentor of Japan Water Forum

- Vice Chairman: Simon Tay, Chairman of the Singapore Institute of International Affairs and Associate Professor of the National University of Singapore; Changhua Wu, Former Greater China Director of The Climate Group

- Secretariat: Japan Water Forum

- Objectives: Host of the Asia-Pacific Water Summit, realization of the outcomes and commitment of APWS, promotion of the regional process for the World Water Forum.

- Member Organizations of APWF:

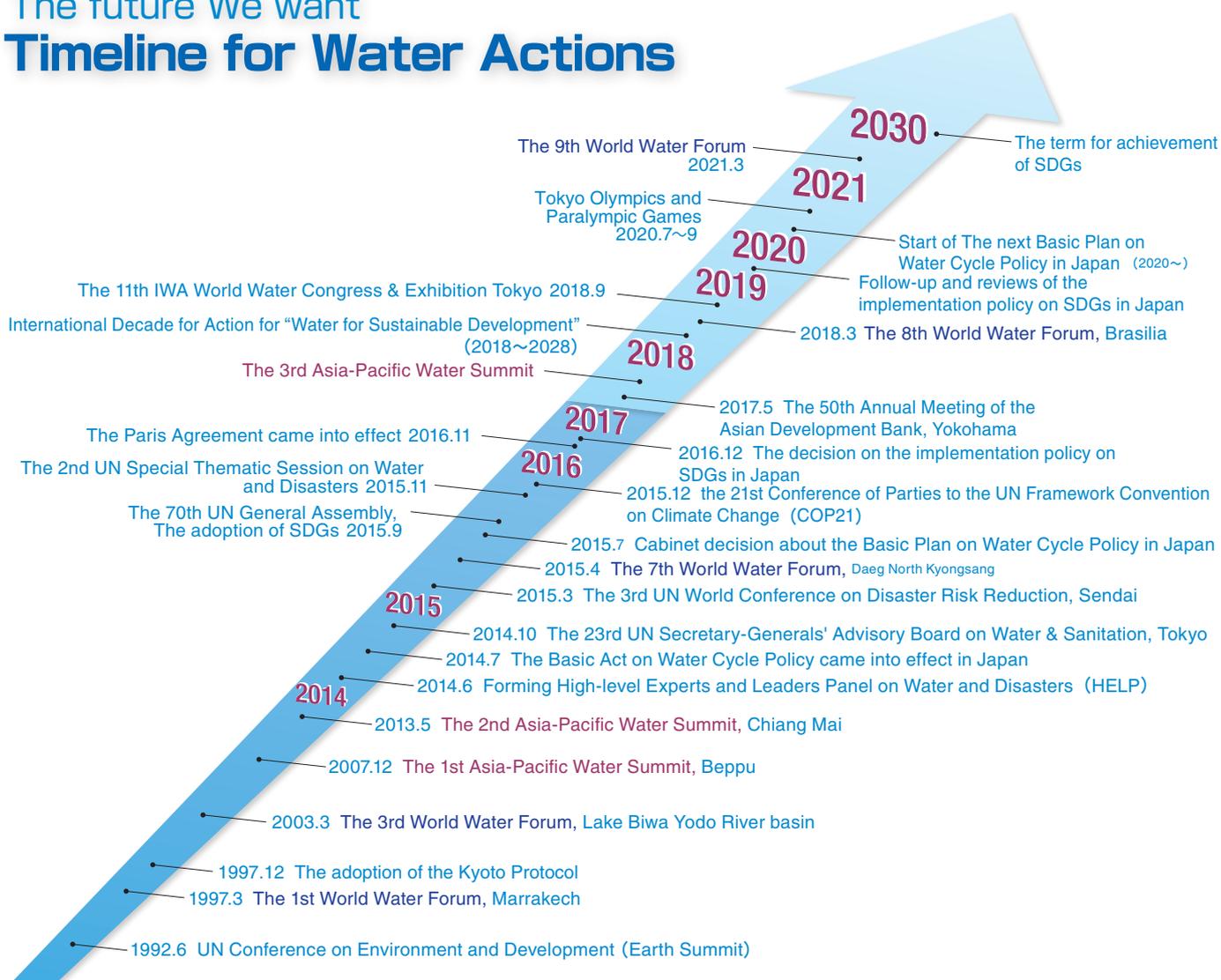
Asian Development Bank (ADB), UN Economic and Social Commission for Asia and the Pacific (UNESCAP), Food and Agriculture Organization of the United Nations (FAO), Singapore Public Utilities Board (PUB), United Nations Human Settlements Programme (UN-HABITAT), United Nations Educational, Scientific and Cultural Organization (UNESCO), International Centre for Water Hazard and Risk Management (ICHARM), International Centre for Integrated Mountain Development (ICIMOD), International Water Management Institute (IWMI), Network of Asian River Basin Organization (NARBO), Global Water Partnership Office (GWPO), Global Water Partnership (GWP) South Asia, GWP Southeast Asia, GWP Central Asia and Caucasus, Executive Committee of International Fund for saving the Aral Sea (EC-IFAS), Korea Water Forum (KWF), Pacific Community (SPC), International Water Centre in Australia (IWC), Japan Sanitation Consortium (JSC), etc.

- Background of establishment: At the 4th World Water Forum held in Mexico in March 2006, under the leadership of the late Ryutaro Hashimoto, the former Prime Minister and the former chairperson of JWF, cabinet members involved in water issues in the Asia-Pacific region requested that an effective mechanism for integrating water resources management into the social and economic development process in the Asia-Pacific region should be developed and the Asia-Pacific Water Summit should be held in about every three years. In response to this request, APWF was established in September 2006, in cooperation with the Asian Development Bank (ADB) and the UN Economic and Social Commission for Asia and the Pacific (UNESCAP).

Outcomes of the 1st and 2nd APWS

<p>The 1st APWS</p>	<ul style="list-style-type: none"> ■ Period: Dec. 3-4, 2007 ■ Host Country: Japan ■ Place: Beppu City, Oita Prefecture ■ Theme: Water Security: Leadership and Commitment ■ Participants: A total of 371 participants, including the Crown Prince of Japan, the Prince Willem-Alexander of the Netherlands (at that time), and 10 top officials and 32 ministers from 40 countries/regions in the Asia-Pacific region and other 16 countries/regions ■ Outcome: “Message from Beppu” to set the goals by 2025 beyond the MDGs as the first ever adoption of the subject of water disaster being one of water issues at a Summit-level convention, reflecting likelihood of water-disaster in the region.
<p>The 2nd APWS</p>	<ul style="list-style-type: none"> ■ Period: May 19-20, 2013 ■ Host Country: Thailand ■ Place: Chiang Mai ■ Theme: Water Security and Water-related Disaster Challenges, Leadership and Commitment ■ Participants: 18 top officials (from Thailand, Brunei, Vietnam, Myanmar, Laos, South Korea, etc.), 16 cabinet members, and over 300 representatives from international institutions, private corporations, academic organizations, etc. from over 30 countries and regions ■ Outcome: “Chang Mai Declaration” to send a message to the international community, urging the importance of addressing water supply and sanitation issues for the foundation of global-level development as the matters of national priorities.

The future We want Timeline for Water Actions



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