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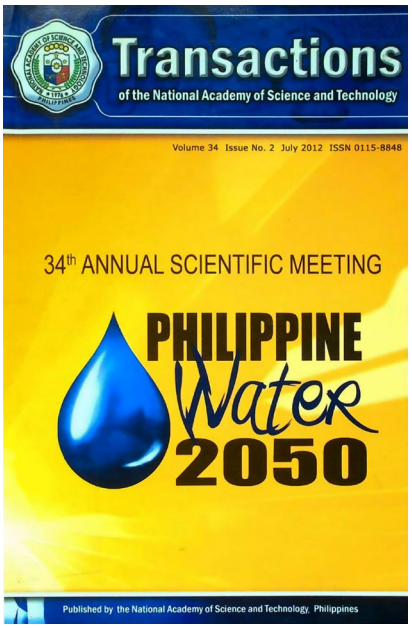

Philippine Water 2050

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Keynote Address for the 34th Annual Scientific Meeting of the National Academy of Science and Technology, Philippines (NAST PHL)

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Allow me to thank the National Academy of Science and Technology Philippines led by Dr. Emil Javier, for giving me this opportunity to share the government's plans and at the same time, challenge our scientists to achieve a more sustainable environment by optimizing our country's water resources.

After one of the small meetings presided by President Aquino to discuss the water supply situation of our country and the problems encountered by the local utilities water administration or LUWA, I was tasked by the President to submit a proposal to prepare a master plan to put some order in the various agencies of government involved in the water sector. With the help of experts, a World Bank grant, and the NEDA technical support team, we have prepared the Philippine Water Resources Master Plan which has been subjected to consultations, involving as many stakeholders in the water sector as possible in various parts of the country for three to four months now.

Finding and Recommendations of Consultations

After several consultation sessions, we were able to identify and agree on the current status and problems of the water sector. Let me just enumerate the key findings of these consultations:

1. We have limited water availability when and where needed for various uses. Many regions in our country lack water for domestic use and irrigation.

2. There are fragmented water-related functions in various agencies and institutions of government as well as in non-government institutions and different kinds of water districts exist all over the country. There are more than 30 agencies in charge of various aspects of water supply in the country and no regulatory framework to cover them.

3. Water quality is poor and polluted in many parts of the country. Many urban centers and cities do not even have waste water treatment facilities.

4. Flooding is happening in many parts of the country, both in urban and rural areas, even in high places, for example, Baguio and Cagayan De Oro.
5. At the same time, drought and water scarcity are also happening. While we have excess water, we also have droughts in many parts of the country.

6. Our ecosystems are in danger, particularly our watershed and mangrove areas.

7. And finally, consultations have shown us is that we lack a scientific decision support system and reliable updated data. Government agencies have unreliable and outdated data, which could not support good decision making process.

To address these problems and major issues, the technical working group decided to take an aggressive and bold step of recommending a major restructuring of the water sector. The proposal, after it has gone through the NEDA Technical Working group and the INFRACOM (Interagency Infrastructure Committee) will be presented to the President.

The proposed Plan is now going through final discussions before the President issues an Executive Order.

From the consultations, one major recommendation is to reconstitute and strengthen the current National Water Resources Board or the NWRB into a more responsive water resources body under the Office of the President.

This will ensure a better coordination among agencies and the integrated use of resources.

The guiding principles behind the proposed Plan are the following:

1. Good water governance for water security, including a transparent decision process involving the various stakeholders both at the national and at the local levels.

2. Integrated water resources management as a basic framework to include policies on land use, water supply, sanitation, irrigation, hydropower, flood management, and other uses of water.

3. A river basin approach to water optimization.

4. Updated and accurate data collection and analysis. Use of latest technologies.

5. Use of scientific decision support systems for water resources, including flood modeling, flood forecasting and a warning system.

6. Finally, development of water resources to include the mitigation of water related hazards.

The proposed Philippine Water Resources Plan is now in its final rounds of review and discussion.

Happily, we have been able to meet with the various sponsors of several bills both from the House of Representatives and the Senate and we are now trying to integrate all of the current pending bills into more coherent water sector structuring.

Supporting Scientific and Technology Initiatives

President Aquino recently launched Project NOAH, or the Nationwide Operational Assessment of Hazards, which is under DOST-PAGASA under the direction of Department of Science and Technology Secretary Montejo.

This is one of the recommendations of the restructuring—to have only one principal agency responsible for flood modeling, flood forecasting and warning system for the country's eighteen (18) major rivers, and eventually to cover the rest of the country.

This system will give communities at least six (6) hours warning before an actual flooding or inundations disaster happens in a particular community. This system will include the deployment of Doppler stations, rain gauges, software systems and the latest mapping technology to be able to establish the behavior of our eighteen major rivers. Further, this system will be able to show visually what communities will be flooded and how high the flood will be based on rain forecast and based on the capacity of their rivers.

Another initiative that DPWH has adopted is a new approach to flood management. Before, DPWH conducted dredging and built or reinforced river walls. But these did not solve the main source of the problem of flooding. The main source of the problem is really upstream and not downstream. We have had meetings with DOST, Department of Agriculture, National Irrigation Administration and DENR, to discuss and address flooding through a long term solution. For example, we can impound the excess storm water and usse it for other uses like domestic use, irrigation, hydropower and flood management.

The proposed water sector coordinating body will face new challenges to address the various concerns of the country to optimize the use of our water resources and minimize the damage and loss of lives due to water- related hazards.

Challenges to Scientists

Let me now pose a few challenges which our scientists can consider:

1. How do you reduce pollution and improve water quality in our rivers? There are many kinds of interventions, soft interventions — vegetation, structural interventions. But I think we have very creative scientists who might want to find ways to reduce pollution and increase the quality of our waters.
2. How can we increase the coverage of water sanitation services, and reduce the pollution of our water ways.

When I was president of Maynilad, to improve the water sanitation coverage, we brought in new technologies — aerators, biochemical interventions and so forth. Thus, instead of discharging directly waste water from septic tanks, we would collect all of the waste water and treat them before they are discharged directly into the water ways.

While we are now looking at the whole system, we are concerned ultimately in how we can improve coverage on a community basis. For your information, we, —the president, the NEDA Board and our office, have approved a Sewerage and Sanitation program which we are launching nationwide, because we really feel that many of our communities do not have sanitation facilities or waste water facilities. We are focusing on our urban centers as well as tourist destinations. Our premier tourist destinations will be polluted in a few years, if we do not take care of the waste water now.

We need to use environment friendly technologies in road constructions, irrigation, waste water, and sanitations service for communities nationwide.

We are considering proposals on how to address landslides, which is also a water-related hazard, using softer, environment friendly interventions like vegetation covers rather than using the conventional concreting. We cannot continue to concrete our mountains slopes because they are not environment friendly. I have seen other forms of intervention in slopes protection such as the coco netting technology which reduces landslides as a result of heavy saturation of slopes. We continue to advocate the use of coco netting technology as well as the rain water collections systems.

Finally, this is the most interesting challenge that I pose to scientists: how to address urban flooding through storm water impounding and the rejuvenation of our aquifers. We need to find ways of reducing urban flooding by re-injecting excess rain water or storm water into the natural aquifer.

Again, I thank and congratulate the NAST PHL for taking up this very important topic of **Philippine Water 2050** as theme of its 34th Annual Scientific Meeting. We are all working for the modernization and improvement of water sources and delivery for domestic, agricultural, industrial and other uses, and the sustainable development of Philippine water resources.