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The challenges for the Palawan Biosphere Reserve in dealing with climate change

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1: Title Page

Good afternoon to all of you. Allow me to greet everybody a “Happy SEP Anniversary.”

The previous presentations by Dr. Rosa T. Perez and Mr. Jose Ma. Lorenzo Tan dealt with the scientific and physical basis of climate change and the global, regional, and national responses to this phenomenon.

We saw how “climate change” is a clear and present danger that we, Palaweños, are facing. The term has come to mean something more than a catchphrase. It takes on the face of an ongoing crisis that we must battle in order to achieve and maintain the quality of life that we are striving for. Global warming is upon us and we need to adjust.

Building up from these two presentations, I shall be dealing with the Palawan context and our response to climate change.

2: Objectives

My objectives are threefold:

One: To contextualize climate change in relation to the strategies contained in the SEP Law;

Two: To highlight the role of the forest cover and protected ecosystems of Palawan as they relate to our response to climate change; and

Three: To highlight the contributions of Palawan institutions in dealing with this important issue

3: SEP Law; Total Log Ban

Allow me to provide a brief refresher on the Strategic Environmental Plan for Palawan or the SEP Law as a sort of review for us who have been mandated to implement this and for all others who are benefiting or stand to benefit from this landmark legislation.

The cornerstone of the SEP Law is the reversal of the trends in environmental degradation and the provision of new development opportunities for Palawan and its people.

The major proviso in the law is its handing down a ban on total commercial logging to allow the forest cover to regenerate which in past times have been subjected to intense logging, kaingin farming, and shifting cultivation.

Two years prior to the enactment of the SEP Law, in 1990, Palawan was declared as a Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The passage of the SEP Law aimed to perpetuate this status of ours as a Biosphere Reserve and as the Philippines’ Last Frontier.

4: The ECAN Strategy

At the heart of the SEP Law is a zoning strategy called the ECAN: Environmentally Critical Areas Network. It is a graded system of protection and development control over the whole province.

Briefly, an ECAN zoning map is produced from biophysical and socio-economic criteria that includes, among others, the elevation of the land, its slope, its forest cover, watershed properties, the habitat of threatened species, land classification, and existing uses of land.

The zones range from the Core Zone or the maximum area of protection down to the Multiple Use or multi-purpose zone.

Every municipality of Palawan and the City of Puerto Princesa adopted its ECAN zones map for its own planning agenda.

So, the question is, how does ECAN relate directly to climate change?

5: ECAN & Climate Change

The answer is simple: The mapping and delineation of ECAN zones is compatible with identifying ecological “hotspots” or areas in need of immediate protection and conservation. Essentially, ECAN’s importance is highlighted in its three major objectives, which are:

1. forest conservation and protection ... in all areas of maximum protection and in such other restricted use zones as the PCSD may provide;
2. protection of watersheds; and
3. preservation of biological diversity.

The zoning of ECAN is a way of identifying hazard-prone areas as physical parameters such as slope and elevation are used in its mapping using geographic information systems (GIS). An ECAN map also indicates biodiversity hotspots as “habitat of endangered species” is also one of the criteria in its mapping.

Furthermore, the ECAN zonation can be an indicator of suitability for land use activities and a decision-support framework in the “siting” or locating of various development options, such as ecotourism, agriculture, and mining.

6: Forest Ecosystem of Palawan

At this point I will enumerate the implications of climate change to critical ecosystems and environment of Palawan that are contained in the ECAN network.

It is best to start with the forest. The loss of forest cover around the world contributes about 20% to annual global greenhouse gas emissions. This happens when the carbon sequestered in the trees are released in the atmosphere through deforestation.

The latest forest cover of Palawan has decreased. Recent data derived from 2005 satellite images indicates that forest accounts for 666,338 hectares or about forty six percent (46%) of terrestrial area of the province. Puerto Princesa City has the largest forested area at 159,000 hectares accounting for around 24% of the total forest of Palawan, followed by the Municipality of Rizal which registered 74,000 hectares of forest. More than half of the forest is considered secondary and only about a quarter is regarded as primary.

Only the municipalities of San Vicente, Rizal, Aborlan, Quezon, Roxas and the City of Puerto Princesa manifested forest areas above our current forest cover of forty-six percent (46%). Eighteen or exactly three-fourths of the municipalities of the province have forest cover below 46%. Particularly, six (6) island-municipalities have forest cover below 10%, which include Araceli, Cuyo, Magsaysay, Agutaya, Cagayancillo and Kalayaan.

A conservative estimate of the carbon stock sequestered within the forests of Palawan is calculated to be about 206 million metric tons of Carbon. This is a significantly high value for a single province considering that it represents half the annual carbon dioxide emissions of large countries such as France, South Africa, and Australia.

7: Biodiversity; New Species Are Still Being Discovered

The severe effects on the diversity of terrestrial plant and animal wildlife can be attributed in large part to the reduction of forest habitats. Endemic wildlife found nowhere else in the world are in danger of becoming extinct. Their important roles in the ecosystem must be preserved in order to maintain that “balance of nature” that is our persistent goal.

I don't need to remind all of you of the richness and diversity of the unique and endemic species found only in Palawan.

Just recently, for example, some foreign scientists and local scientists from Palawan State University reported in a scientific journal the existence of a spectacular new species of *Nepenthes* pitcher plant from the Mt. Victoria Range in central Palawan. This new record species, *Nepenthes attenboroughii*, is of substantially large size that makes it one of the largest known pitcher plants in the world.

Who knows what more will be discovered in the forests of Palawan and what medicinal or ethno-botanical properties such plants may contain? It will be unfortunate if the long line of species discovery in the province will be cut short because habitats are being destroyed even before species living in them are discovered.

8: Mangrove Ecosystem

The mangrove forest cover of Palawan has increased by more than 10,000 hectares, a 28% increase. Palawan's current mangrove forests cover an approximate area of 58,400 hectares. This accounts for roughly 42% of the total remaining mangroves of the country.

Continuing threats to mangroves are present. The main activities which undermine the extent of mangroves include their conversion into fishponds and agricultural areas, the

harvest of mangrove timber for coal fuel, and debarking or “tanbarking” of mangroves which still occur in the southern municipalities.

9: Coral Reef Ecosystem

When it comes to coral reefs, Palawan coral reef has an approximate area of 9,800 square kilometers, accounting for 36% of the Philippine reefs.

An estimate on the health of the reefs of Palawan paints an alarming picture of the state of our fisheries. We estimate that only 3% of our “near shore” coral reef remains in excellent condition (or those with live coral cover of 76-100%) and 38% are in good or fair condition. The much diminished state of our live coral reefs has implications on the maximum sustainable yield of fishery food resources that the reef areas can produce.

The battered reefs of Palawan will not grow overnight. That is why we are calling for everyone to sustain our efforts on increasing the resilience of our reefs through a comprehensive coastal resource management. The establishment of marine protected areas is one key step to allow our coral reefs to recover.

10: Coastal Tourism and Fisheries

The three major economic sectors of Palawan that are expected to be negatively affected by climate change and global warming are agriculture, fishery, and tourism.

The largely coastal based ecotourism is expected to be drastically affected considering the pollution and sedimentation of coastal waters, the inundation of beaches, and the potential decimation of coral reefs on a large scale.

The same is true with fishery with the possible decline in productivity of the coastal zone because of potential large scale coral die off. The Palawan live reef food fish trade, which is valued annually at one billion pesos, is highly dependent on the status of our corals and the quality of our coastal waters. Coral reefs are the habitat of the Leopard coral grouper, a major commodity that is exported from Palawan to business centers in Hongkong and China.

The drafting of a comprehensive policy on the live reef fish trade that includes the Quota System for the trade of live reef fish for food is a forward step that the PCSD is taking. This policy has provision for the protection of coral reef habitats and for research and education on the effects of climate change on Palawan fisheries.

We need to be serious about the state of our fisheries as the demand for Palawan fish continues to grow. At present, about 60% of fish landed in Manila came from Palawan waters.

11: Institutional Contributions

We need adaptation and mitigation. We also need geoengineering methods as well as *social* engineering, as what were highlighted in the first two presentations.

So far we have seen that the rich environment and diverse natural resources of the Palawan Biosphere Reserve serves as the backbone of its economy. It is imperative that urgent measures be put in place to cushion the impact of climate change on both the natural and economic systems of the biosphere reserve.

The functions and roles of our institutions are, at this point, very critical.

12: Protected Areas (MMPL, TRNP)

One of the substantial initiatives in response to this issue, undertaken by the Local Government Units, other government agencies, and non-government organizations in Palawan, is the declaration of the whole 126,000 hectares of Mt. Mantalingahan Range in southern Palawan as a Protected Landscape. This will ensure for future generations an unspoiled land that will support the food and water requirements of the indigenous peoples (IPs) and lowland inhabitants.

The Mantalingahan initiative was boosted up from the start by the Provincial Government's Executive Order No. 10, in 1998, which created the Mt. Mantalingahan Planning Task Force. The task force evolved into the present Southern Palawan Planning Council or SPPC. The SPPC is composed of the five municipalities bordering the mountain range: Quezon, Rizal, Brooke's Point, Española, and Bataraza.

Executive Order No. 10 was further strengthened by PCSD Resolution No. 00-164 which declares the areas as a Special Management Zone within the framework of the SEP.

The political will of the provincial government, the PCSD, the five southern Palawan LGUs, the stakeholder-communities, and various conservation groups ultimately paved the way for the endorsement of the mountain range as a protected area under the NIPAS.

On the other hand, the Tubbataha Reefs Natural Park according to a study of experts of Conservation International, most likely serves as the strategic source of coral and fish larvae in the Sulu Sea and the internal waters of Palawan.

In fact it can be deduced that the large scale or mega-MPAs, such as the Tubbataha Reefs and the atolls of Kalayaan Island Group, serve us all by providing fish larvae that is recruited to near-shore reefs surrounding Palawan islands. This connectivity cycle is in danger of being cut off if we are remiss in our commitment to safeguard our protected areas.

The provincial government is a co-chair to the Protected Area Management Board of Tubbataha Reefs Natural Park. Completing the leadership and composition of PAMB are the Cagayancillo LGU, national government agencies, and concerned stakeholders.

Threats to the integrity of the Tubbataha reef system exists as this area is one of the casualties of mass coral bleaching during the 1998 El Niño.

Other protected areas and heritage areas in Palawan which we need to maintain include:

- the Underground River
- the Irawan Watershed Reserve

- the El Nido-Taytay Managed Resource Protected Area
- the Malampaya Sound Protected Landscape and Seascape
- the Rasa Island Wildlife Sanctuary
- the Coron Island Protected Landscape and Seascape
- the Victoria-Annepahan Mountain Range within Puerto Princesa City, Aborlan, Narra, and Quezon,
- and others

13: PCSD as Lead Agency

The PCSD as the highest environmental policy making body in the province is in a strong position to initiate policies pertaining to climate change.

The Council has the leverage to engage with all instrumentalities of the Government, and with private entities and organizations, for cooperation and assistance.

We need to cultivate preparedness in several fronts: institutional preparedness, educational and scientific preparedness, livelihood preparedness, and disaster preparedness. We need to be prepared in all aspects of living and to expect the worst.

What is being called for is *greater* government activity coupled with citizen vigilance and private and corporate industry support.

Local and regional-international partnerships are also imminent as climate change is a global issue.

14: Contributions of Palawan Institutions

A few weeks ago, the PCSDS distributed a survey questionnaire to Palawan agencies and institutions to ascertain the extent of their involvement in taking action against climate change. A total of 14 partner organizations identified their initiatives in dealing with climate change. The result of our survey is very telling in many ways:

One of our observations is that the institutions of Palawan are well aware of the adverse effects of climate change. The strategies they identified are as diverse as their mandates.

The adaptation and mitigation strategies, taken together, represent a comprehensive approach to the issue and they vary from common strategies, such as energy-saving measures, to institution-specific mandates such as educational and community-based approaches.

We also found out that almost all of the strategies provided pertain to the enhancement or maintenance of the stability of environment and natural systems. In other words, the majority of the interventions, and policies (whether big or small, simple or complex) fall into the category of "Conservation" - conservation of natural resources and energy sources, and the capacity building of human resources.

15: Some Identified Adaptation and Mitigation Strategies

Categories of the affected or impacted areas include: Health, Agriculture, Forest, Water Resources, Coastal Areas, Species and Ecosystems, the General Environment, Energy Use, Science Education and Research, and Philosophy, Religion, and Spirituality.

The instituted programs ran the gamut from organic farming, to community organizing, to enforcement of environmental laws, to IEC, to providing concrete livelihoods to marginalized communities, to reforestation, to wildlife conservation, to anti-pollution drives, to policy-making, to environmental education and trainings, to solid waste management, to exploration of biodiesel potential, to alternative energy use, to establishment and management of protected areas, and to catechism and religious teachings.

The Apostolic Vicariate of Puerto Princesa, for example, is implementing an innovative IEC that dwells on spirituality and philosophy to address climate change issues.

The academe and the research institutions are including climate change issues as part of their research agenda.

Most of the initiatives are largely mitigation in nature. For instance, they target the reduction of greenhouse gases, such as the Municipal LGUs implementing projects on waste management or the City Government's Trike Bayan Project which promotes the use of "electric tricycle" that replaces fossil fuel motorcycles with the more efficient electric power.

The Provincial Government's Rural Electrification Program also aims to increase community's access to green technology. The components of the program include the installation of photovoltaic cell or solar panel to energize barangays and households in off-grid areas of the province.

The Municipality of El Nido and partner groups, for their part, deserve commendation for their CRM activities that include support to biodiversity surveys, transplantation of coral reefs, and MPA creation and management.

In November of last year, the Sangguniang Panlalawigan of Palawan passed a resolution on the moratorium on the endorsement of small scale mining activities in the whole province. This bold initiative is a very welcome pause on the disturbance of natural ecosystems. It paves the way for a rationalized treatment of mining applications and a careful discernment of their adverse effects on economy and ecology.

Another significant initiative is to increase carbon sinks through the establishment of protection forests and reforestation projects under the ECAN. We have, under these initiatives, the Provincial Government's Pista ng Kalikasan, and the City Government's Annual Pista Y ang Kagueban, which is slated for next week, June 27. As always, we will actively take part in this tree planting drive. To date, the Pista y Ang Kagueban planted almost 2 million trees covering 271 hectares in Magarwak and Irawan watersheds.

We acknowledge that these are still not a complete solution to the problem. A complete solution is one that addresses the multi-faceted nature of natural resource extraction and consumption and one that accounts for equitable sharing of resources.

I believe that the preponderance of interventions that are being put into place is a very encouraging sign.

Please allow me to conclude with some recommendations and observations:

First: We agree with the Governor that we do need a technical coordinating body, a sort of localized Intergovernmental Panel on Climate Change, which will make sure that all the enumerated efforts and initiatives remain focused on Palawan's coping with climate change. The very nature of the threat of climate change obviously requires a cooperative arrangement across all institutions in Palawan. A mechanism of cooperation is needed so that the institutions will work together in a coordinated manner. We need to pool our resources together so that we can come up with an arsenal of strategies that is duly guided by science.

Second: Let's recognize also that we are not industrialized enough to be a major carbon source. It seems that, on our end, having the substantially intact yet threatened forest cover in the country, the creation of carbon sinks (that is, more trees, more forest) is the optimal initiative that we can commit to.

Third: Our investment in efforts to mitigate climate change in the long run needs to be balanced with respect to population stabilization and conservation of protected areas and biodiversity. The latter strategies would yield immediate results.

Finally: We must acknowledge that addressing climate change has many value added benefits. We are not doing this for the sake of climate change; it is for increasing human welfare. In dealing with climate change, we address a mix of other problems like urban pollution, wasteful consumption, and energy inefficiency. In dealing with climate change, we promote sectoral cooperation through programs about reforestation, sustainable agriculture, soil conservation, and ultimately, poverty alleviation.

16: Final Words

The bottom line, ladies and gentlemen, is this:

Climate change is one defining issue of our time that needs to be addressed not in a piecemeal but in a holistic manner.

Dealing with climate change can be the integrative factor that will direct us to a more sustainable lifestyle and worldview.

Ultimately, our response to climate change will define the quality of our future and of the future of our children. I know that we will prevail, because there is no limit to what we can do. We need to be steadfast in our advocacy. No action on our part can lead to catastrophic consequences.

17: End

Salamat po ng marami.