The Final Decade

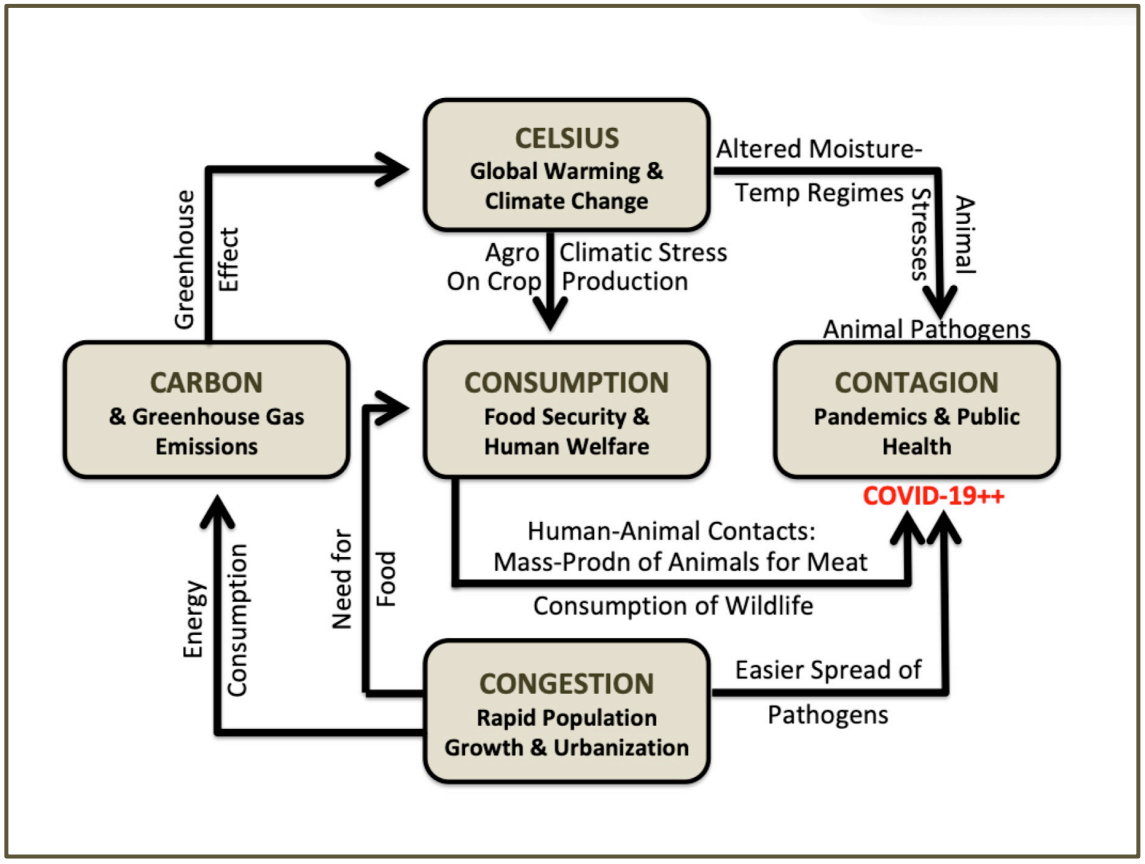
Why We Must Worry, What We Must Do

*A White Paper by **Brain Trust, Inc. (BTI)***
on critical actions the Philippine Government and the Filipino people must take in the next ten years to ensure and secure the future of our country and its people in the midst of the rising intensity, expanding breadth, and escalating threats of Global Climate Change.

THE PRESENT WE SEE

We could argue and debate endlessly on why or how events have unfolded, but:

WE BELIEVE that what we see happening in the world today could have been mitigated had we paid more attention to five closely related challenges interlinked with climate change, to which the Philippines is among the most vulnerable:



- **CARBON.** We depend heavily on hydrocarbon fuels for industry, commerce, transport, and most other aspects of our family and community life. We have imbibed a "Petro Culture," a lifestyle routinely dependent on petroleum and

petrochemical products like gasoline, diesel, and plastics. It is a lifestyle that makes Filipinos vulnerable, not having our own supplies of these commodities. Unless we make a decisive shift, we would in due time risk our national security.

- **CELSIUS.** Our "Petro Culture" in turn contributes to rising global temperatures, and all its attendant perils. More and stronger typhoons, and prolonged drought episodes especially in our food baskets in Eastern and Central Luzon, Western Visayas and portions of Eastern and Central Mindanao, are expected to break new levels in the next decade.

- **CONGESTION.** At current trends, our population growth will soon outpace the carrying capacity of our rich yet fragile resource base. And as climate change diminishes reliability of agriculture as a livelihood, the lure of urban centers heightens, especially for young people. Densely populated megacities already challenge society's ability to protect the welfare of urban dwellers, as physical congestion translates into escalated costs of traffic delays, respiratory and other illnesses, criminality, and provision of basic needs and facilities.

- **CONTAGION.** Higher temperatures are fueling the rise in density of pests, parasites and pathogens such as swarming rodents, bloodsucking parasites like mosquitos and ticks, and viruses. The ongoing COVID-19 pandemic heralds a new era of persistent public health risks, especially in congested highly urbanized areas and areas underserved by the limited health care assets of our country. Weak public health administration and policymaking could swell the ranks of our country's poor and inherently disadvantaged population.

- **CONSUMPTION.** Unsustainable highly carbon-using and waste-generating lifestyles are a major driver of ecological stress. The rapid rise in our consuming population exacts heavier tolls on the supply chain, linked in turn to the breadth of our carbon footprint, extent of heat generation, congestion in production areas, and to expanded avenues for contagions.

Climate change is real, and is now fast plummeting into "Climate Chaos" for the Philippines and for the rest of the world. It poses a "near- to mid-term existential threat to human civilization" (Queally 2019)[1]. In a Climate Change Vulnerability Index that rated 16 countries out of 170 examined as "extremely vulnerable to climate change," the Philippines ranked sixth of the 16 (Maplecroft 2010).[2]

[1] Queally, J. 2019. " 'Existential Threat to Civilization': Planetary Tipping Points Make Climate Bets Too Dangerous, Scientists Warn", in Common Dreams, November 28, 2019; see https://www.commondreams.org/news/2019/11/28/ existential-threat-civilization-planetary-tipping-points-make-climate-bets-too.

[2] Maplecroft, 2010. Climate Change Vulnerability Index: Where will your business face the greatest threats from climate change? https://www.maplecroft.com/risk-indices/climate-change-vulnerability-index/

WE SEE our country and the world now facing the prospect of unfamiliar "new normals" with climate- and contagion-related conditions turning life as we know it on its head.

- *Over 10.1 million globally and 35,455 in the Philippines have been infected with COVID-19* as of late June 2020, and counting. The World Health Organization expects wide availability of COVID-19 vaccines only by late 2021 and the outlook for the pandemic remains unclear.

- *Numerous small businesses have perished,* and the economy is in deep recession. Unemployment has jumped to a record 17.7%, with 7.25 million people out of work. Government expects 10 million workers to be displaced by 2021, and around 300,000 overseas Filipino workers repatriated.

Prospects for recovery are made even more challenging because:

- *Farmers face falling and highly variable incomes,* unable to anticipate the frequency and length of rainy and dry seasons that govern the rhythms of their production activities; they are also less able to anticipate and plan for crop and income losses due to typhoons and drought.

- *Fishers see their catch decline* as warmer seas impair their ecological productivity, bleached corals threaten fish biodiversity and stocks, and changing chemistry and mixing of top and bottom layers of our waters affect the flow of larvae, nutrients, and detritus supporting our inland and marine fisheries.

- *Business leaders face unfamiliar risks,* increasingly unable to anticipate new patterns of flooding, typhoons, epidemics, and hot days, as these impact on their continuity of production, availability of human resources, and security of energy supplies.

- *Educators see learning outcomes compromised* by uncertainties in productive class days, reduced by increasingly unanticipated climate and epidemiological disruptions that affect the safety and well being of learners within and outside school premises.

- *Parents fear for their families and their homes,* especially as those disadvantaged and deprived dread the prospect that their dwellings and loved ones could be swept away by natural disasters or razed in extreme temperatures; that hunger would stalk them as price spikes from weather-induced supply disruptions impair their access to food; that their access to water and energy would be compromised by extreme weather events and a degraded environment; and that their families will succumb to infectious diseases now increasing in incidence and ease of transmission.

WE CONCUR with the scientifically documented findings of the Intergovernmental Panel on Climate Change (IPCC) that:

1. Human activity has profoundly affected climate, and recent levels of greenhouse gas emissions are the highest in history, causing widespread impacts on people and nature.

2. Continued emission of greenhouse gases will cause further warming and long-lasting changes in the climate system, with severe, pervasive and irreversible impacts; and only substantial and sustained reductions in these emissions, coupled with adaptation, could limit such climate change risks.

3. No single option among many alternative adaptation and mitigation options would be good enough; climate change mitigation and adaptation must be linked with other societal goals in the design of integrated responses, policies and cooperation at all scales.

WE TAKE HEED of the IPCC's warning that ***only 10 years remain*** for humanity to keep global warming to within 1.5^{o}C, beyond which the risks of drought, floods, extreme heat and associated wider incidence of poverty would severely escalate and cause untold disaster.

THE PERILS WE FACE

WE ARE ALARMED by the IPCC's warning that:

- Our oceans are warming, turning more acidic, hold less oxygen, and getting more stratified (with less mixing across layers);
- Frigid zones are fast thawing, releasing huge amounts of greenhouse methane into the atmosphere, thus further accelerating global warming;
- More extreme El Niño and La Niña will result from warming seas, triggering more severe weather events worldwide; and
- Coastal flooding could become more frequent and more extreme, with seas rising much higher than previously anticipated.

WE ARE CONCERNED especially with drought, floods, extreme heat, and the attendant risk of pandemics, and how these:

- Threaten our country and our national well-being in the years ahead, and those of other countries as well, and even more so beyond the next decade;

- Raise the specter of escalating poverty and human hardship that the current COVID-19 pandemic is already bringing forth.

THE PATH WE PROPOSE

WE SUGGEST that as we plot our way out of the pandemic-induced recession, we look further afield and begin to proactively and aggressively pursue three crucial strategic imperatives: to **systematize, scale, and shift** our primary production activities to where our country and people would gain the best ecological support systems for our long-term survival and progress as a nation:

Strategic Imperative 1: SYSTEMATIZE

1. ***Design the Recovery Plan to be a foundation for long-term sustainability,*** by mainstreaming reduction of climate change vulnerability in the economic recovery agenda, in public investment programming, and in overall governance. With the need to reconfigure the Build, Build, Build program, public investments that will create employment in agriculture, fisheries and ecosystem services must be prioritized. Platforms, frameworks, and mechanisms must be created to pursue public-private partnerships on climate change mitigation and adaptation at the national and subnational levels of governance. Operationally, the National Economic and Development Authority (NEDA) could (a) adopt a "systems checklist" of key drivers of climate change vulnerabilities, so that NEDA Board approvals of major development programs would consistently consider their impacts on the drivers, and require integration of measures to reduce such vulnerabilities; and (b) formulate a Climate Change Vulnerability Reduction Strategy for the medium- to long-term, to serve as basis for the public sector fiscal program and annual budgeting cycles. Meanwhile, the Commission on Audit could expand its mandate to cover government fiscal performance against impacts on reducing climate change vulnerabilities nationwide, and ensure a systemic multifactor accountability of national and local government leaders across the range of drivers of climate change vulnerabilities.

2. ***Make the* ecosystem *– not political administrative areas – as unit of development*** and basis for investments in sustaining the country's natural capital at the local level where they are. This will entail establishment of platforms and frameworks for inter-LGU collaborations and public-private partnerships for the purpose of protecting, enhancing and sustaining primary productivity (fishing, farming) across political jurisdictions and within often broader natural bounds defined by the ecosystem. In the pursuit of employment and livelihood opportunities for workers massively displaced by the COVID crisis, job-creating initiatives could include developing and investing in environmental formations like coral reefs, sea grass meadows, watersheds, mangroves and others that provide critical ecosystem support services to primary production. Such investments would address short-term urgent employment challenges, while promoting enhanced ecological efficiency, and encourage more systemic community-based collective actions to address climate-related vulnerabilities of primary production activities.

3. ***Systematically link reduction of climate change vulnerability to sustainable development.*** Climate change vulnerability reduction must be viewed as part of the nation's collective efforts to *make people economically and socially prosperous while also improving the country's environmental security and ecosystem services, informed and enriched by historical and cultural traditions and knowledge, which are consciously upheld and preserved*. This is what sustainable development is all about. When climate change vulnerability diminishes, sustainable development is better achieved.

4. ***Systematize development planning across space and time.*** Development plans must be shaped to integrate highland-to-ocean (H2O) concerns into a unified sustainability thrust, across intergenerational interests. The plans toward achieving *Ambisyon Natin 2040* must be tightened even more to focus on integrating across landscapes and generations the promotion, protection, and sustainability of key social, cultural, economic, and ecological needs: water, food and nutrition, public health, energy, incomes, social and cultural security, and building up our nation's environmental capital.

Strategic Imperative 2: SCALE

Limit the utilization of *living resources* to within their ability to naturally replenish their stocks and maintain the stability and health of the ecological foundations of their sustainability. Institute combinations of command-and-control and economic incentive mechanisms to:

1. Keep ***fish catching*** efforts across space and time to within the sustainable yields of each species being harvested in any particular place, while also ensuring – through a range of alternative livelihoods and equity measures – that fish catchers' incomes and their social and political well-being are being improved. As climate-related risks to oceans and seas get more severe, productivity would likely decline, and the stability and sustainability of marine species and ecosystems would likely diminish. It thus becomes even more crucial that human pressures on capture fisheries be reduced by way of redirecting the pressures toward alternative income, food and protein sources like aquaculture, mariculture, and fishery product value-adding. With fish still being the most common and healthiest source of animal protein, continued promotion of fisheries is necessary, but fisheries R&D and policy making must urgently address the need to scale fishing activity to within increasingly constrained ecological limits and make the limits more elastic.

2. Keep ***farming*** activity within the capacity of soils to replenish their natural fertility and moisture content. Farming techniques need to be redesigned to better conserve the necessary environmental capital for farming. Ecological conditions, not the pull of market prices, should determine the scale of farming a crop. Importation must be deemed a tandem measure to domestic farm production so that demand side pressures would not lead to breaching ecological limits. Science and technology must be harnessed to improve the efficiency of our use of available environmental capital

for farming. Farmers must be capacitated to earn more and gain more from longer spans of the agriculture value chain.

3. Ensure that downstream ***agro-industries*** maximize farm and fishery value adding in ways that efficiently utilize our climate change-vulnerable environmental assets, while raising fishers' and farmers' incomes and social/political equity.

Strategic Imperative 3: SHIFT

1. Relocate the center of gravity of our primary production sector from its current concentration on coastal and irrigated lowlands, up toward rain-fed uplands and out to our oceans and seas.

    - ***Coastal farmlands*** are increasingly at risk of sea level rise and saltwater intrusion. Together with inland flatlands, they are most at risk of experiencing severe flooding and exposures to extreme heat and rainfall episodes. Their viability to provide sufficient ecological platforms for sustained production of food and fiber for a rapidly increasing Philippine population will likely soon plunge. It is most urgent to begin redirecting soonest S&T and development investments on primary production to higher uplands for land-based crops. Some examples: Use the RCEF to establish large (500-1000 ha) upland rice estates ("rice haciendas"). Provide housing and support services for erstwhile lowland rice farmers belonging to the 3rd and 4th income quartiles of the population. Install wind and pest breaks with sufficient capacities to reduce sheet erosion and improve soil water holding capacities. Include 3-5 ha rainwater collection ponds and tank impoundments spread across the estate.

    - We have over 200 M hectares of ***seas and oceans***. It is most urgent as well to begin redirecting S&T and development investments on harnessing the potentials of our seas and oceans for food and fiber. In short, we must shift the bulk of our primary productivity from the area-limited ***brown*** to our much vaster ***blue*** environment.

    - Because it is equally urgent and necessary that any move to relocate the backbone of our primary productivity to uplands and marine areas be done with utmost care and concern for expending ecological capital, it is necessary to begin soonest building up of **greener uplands and bluer seas – a "blue-green" economy** – as a major effort to future proof the Philippines in an emerging age of warmer and higher seas, drier and hotter lands, and rising vulnerability of our islands to a climate crisis.

2. Relocate investments on ***settlements and infrastructure*** to elevated areas. This is to induce faster relocation of concentrations of human population to areas that are less vulnerable to sea level rise, saltwater intrusion, and flooding. Core infrastructure like roads, schools, hospitals, power plants, telecommunication facilities, and water collection, storage, and supply complexes like impounding dams and tanks – all of which tend to draw settlements around them – must be shifted soonest toward higher

grounds with accompanying investments on (a) "green design" and principles (like "build with nature"), and (b) strengthening protective and supportive environmental formations (like forests and grasslands), all with careful consideration of ecological limits.

To systematize will call for no less than a mindset change to overcome persistent silo mentality and compartmentalized thinking along economy-ecology-society divides, which keep efforts fragmented and ineffective; shed paradigms to view looming threats under an entirely new light; and reinvent age-old structures and mechanisms to uphold the principles of subsidiarity and close horizontal coordination, over traditional top-down governance.

To scale would entail recognition that the rule of the market falls short in allocating scarce resources efficiently across time and across generations; that increased economic production can be delinked from increased resource use; and that the base of our inherent wealth extends well beyond our shores and flatlands.

To shift would involve an overhaul of physical plans at the national down to the local level; redirection of public investments in unfamiliar directions and into out-of-the-box solutions; and fixing our physical planning perspectives much farther afield in spatial and temporal terms, well beyond the coasts and plains, and well beyond leadership tenures.

Faced with a future laden with real and daunting climate and environmental risks, we must do no less. The COVID-19 crisis is a mere foretaste of the wider global threat we all face, and has shown humanity that the threats we face are likely to come much sooner than we think. The time to act is ***now***.

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Brain Trust: Knowledge and Options for Sustainable Development Inc. or Brain Trust Inc. *(https://braintrustinc.org) is a multidisciplinary think tank founded in 2004 by Cielito Habito (Chair), Ella Antonio (President), Roehlano Briones, Ma. Lourdes Lagarde, Vincent Lazatin, Ben Malayang III, Marian Pastor-Roces, Danilo Songco, Jose Ma. Lorenzo Tan, and the late Mario Taguiwalo.*