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## Ecological Hyper-Modernization after Rio + 20: Whose Challenges? Contradictions of the Millennium Development in a Globalizing World\*\*

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### Abstract

After Rio + 20, it is almost certain that human world confirms the key consensus for the future: acknowledging “the need to further mainstream sustainable development at all levels, integrating economic, social and environmental aspects and recognizing their interlinkages, so as to achieve sustainable development in all its dimensions” (UNCSD 2012). But how far governmental, business and non-governmental agencies can foster collaboration to achieve sustainable development is still questionable. This brief outlines the contradictions, inertia and dynamics of global governance on sustainable development in the coming decades.

### 1. Introduction

Like its predecessor of the Earth Summit in 1992, the 2012 United Nations Conference on Sustainable Development (Rio + 20) aimed high for a successful delivery of a framework and a set of policies to advance sustainable development that will be followed up at different countries and regions in the years to come. Historically, the Rio + 20 has the largest numbers of participant-representatives from

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governmental, business and non-governmental organizations for United Nations' global initiatives for global development.

Like other UN conferences, the Rio+20 delivered a big package of (commitments for?) initiatives by world leaders on path for a sustainable future: more than US\$500 billion mobilized with over 700 commitments made. The official outcome document for Rio+20, entitled: *The Future We Want*, calls for a wide range of actions, including (UNCSD 2012):

- launching a process to establish sustainable development goals;
- detailing how to use the green economy to achieve sustainable development;
- empowered UN Environment Programme for a new forum for sustainable development;
- promoting corporate sustainability reporting measures;
- taking steps to go beyond GDP to assess the well-being of a country;
- developing a strategy for sustainable development financing;
- adopting a framework for tackling sustainable consumption and production;
- focusing on improving gender equality;
- stressing the need to engage civil society and incorporate science into policy; and
- recognizing the importance of voluntary commitments on sustainable development.

But the results of the Conference and the related initiatives are fallen short from the expectation and hope of those co-participating non-governmental agencies, given its very “soft”, non-target or action-specific, and non-binding (if not weak) document—even less than a memorandum of understandings or a declaration like the Kyoto Protocol (1997–). . . .

At this historical juncture: it is not clear that how far existing policies and practices, for (or against) the sustainability of the Earth, could be further pursued in long-term without any confirmed commitment from the participating nation states . . . . The question now is how to make the essential policy (and praxis) tools for transformation to the green and sustainable development; not least in terms of how we can go further and accelerate the pace of the progress towards truly sustainable patterns of consumption, exchange and production (UNEP 2012).

Obviously and among all factors, one major arena for sustainable development is the public policy guidance and nurturing for sustainable re-sourcing for food, energy and water (among all essential commodity goods). And how to develop proactive policies for sustainability of the Earth, coupling with human survival (and security) with biodiversity, is our historical challenge!

In the following sections, this paper will delineate the contradictions and dynamics in two major contesting developmental arenas, alternative renewable energy re-sourcing and water and food supplies for global-local (glocal) diversity - cum- sustainability; ending with a short remark on the prospects of glocal sustainability in the new (21<sup>st</sup> century) socio-economics.

## **2. Energy Crisis as Poverty of Technology: Fukushima 3.11 as Apocalypse?**

Although the last nuclear production unit in Hokkaido had went off-line on 5. May 2012; another (and the only first ever) one at Oi town, Fukui prefecture, has been back to supply electricity in July 2012! But still, Japan is an almost nuclear free country not just as its Constitution prescribes, but as a sudden death of nuclear technology since 11 th March 2011 (*the 3.11*) multiple disasters of Tohoku earthquake, tsunami and the near-to-melt-down of Reactor 1, 2 and 3 of Fukushima Daiichi Nuclear Power Plant. All Japanese nuclear power plants have to shut down for not just regularly (every 18-month period) for maintenance, but after the 3.11, they under a more vigorous and controversial stress test regime; plus all is subject to final approval by local municipalities and regional governments where the plant locate. The socio-political and technological complication of, controversies around, the procedure for approving, and against, the re-start of nuclear power plant are more than obvious at the post 3.11 era.

### **2. 1 Crisis-Ridden Nuclear Power Technology: Not Renewable and Alive Anymore!**

The problematic crisis-ridden nuclear power technology reflects the post-war myths on the de-militarization of the new uranium-isotopic power and the controlled radiation by the high-cost and questionably application of nuclear physics and engineering for peaceful use of nuclear power; though once questioned in the 1979 Three Mile Island accident and the 1986 Chernobyl disaster (Sovacool & Valentine 2012; Macer 2012). The mythical scientific regime confronting unprecedented risk of nuclear engineering is much under the critic-analytical delineation on *The Risk Society (Risikogellschaft)* by Ulrich Beck (2006).

Missing out the risks of nuclear energy for civilian use for the post WWII (1950s–1980s) economic growth, and forgetting the disaster-ridden nuclear radiation when searching for global clean energy (1990s–2011), nuclear power has been claimed even in reports by International Energy Agency that it should be raised to 25% of global power supplies. The 3.11 nuclear disasters are therefore in waiting given the poverty of technology, ignorance and mythology on high tech en masse.

Following the nuclear power development in USA and France, but uneasily

against the victimization of atomic bombings in Hiroshima (6.August 1945) and Nagasaki (9.August 1945), nuclear power accounted for 26% of total electricity supplies in Japan before the 3.11. And Japanese government even once in 2010 proposed for a stronger role of nuclear power (raise up to 53% of total electricity power) to cater energy demand for 21<sup>st</sup> century.

The energy regime of Japanese system is not just solely dependent on external supplies of mostly fossil fuels, but also driven by the ultra-industrialization with high volume of energy consumption. Nuclear power development is much driven by its energy based, hyper-industrialization for exports and locally, exceptional huge electrification of urban life since 1960s. Japanese society is electricity based so to speak! Though nuclear power, for peaceful use, development is against its historical tragedies: the double (Hiroshima & Nagasaki) atomic bombings and the contrast to its constitutional forbidding of nuclear weapon (the triple negation on the building, posses and use) . . .

But 3.11-disasters reveal the paradigmatic puzzles: the realism of the poverty of high-tech based new energy sourcing at the post WWII (1950s–80s) and at the turn of the new millennium (2000–2011). The ending of nuclear power in Japan in some sense is not as accidental as it is thought due solely to 3.11 disasters, but it is embedded in the exponential growth of risks in large scale (speculative) high-tech system deriving from nuclear weaponry to kill! To recapitulate, human lives and ecology are to be terminated in nuclear energy regime; the matter is time beyond homo sapiens (for nuclear radiation-exposure for instant death and the thousand-year nuclear radioactive decay) to survive!

## **2. 2 The 3.11-driven Energy Regime Change beyond Japan (Germany?)**

The genesis of the normal accidents of nuclear power—as large scale high-price and high-tech energy system, in Japan is also structurally embedded with its governance structure and the inertia to supervise and to govern. There is strange relationship between governmental nuclear regulatory bodies and energy providers: the high-tech specialists differentiation and their cronies: the best experts work for nuclear power suppliers, the meritocratic ones stay within the governmental ministries academic and regulatory bodies; plus the old-boys (OB) system for the early-retired officials serving nuclear power companies. . . .All are in crony high-tech developmentalism!

Confronted with the unprecedented 3.11 disasters, it is confirmed from numerous media and scientific sources that “None knows what happened at/after Fukushima 3.11” . . . But it is evidently confirmed that the nuclear melt-down at Fukushima Daiichi Nuclear Power Plant has blown up all superb euphoria and myths under nuclear power hegemony. Even the strategy for “de-commissioning”

Fukushima Daiichi Power Plant (6 + 4 units) is a totally new learning process (with 40 + years!), for Japan as well as for the world to learn from the beginning (the re-making and re-learning for nuclear-power plant (after the disaster) de-commissioning); since Chernobyl's totally cover-up with building materials have not been the "de-commissioning" case.

Except one, all 54 Japanese nuclear power generator-units are either stopped, offline or undergoing maintenance; plus the Fukushima 6 + 4 reactor-units will be decommissioning (the 40 + plus year project). As long as more de-commissioning is in the pipeline, the poverty of both technology and energy (electricity in particular) supplies is more than obvious. In Summer and Winter 2011, there were campaigns to reduce electricity consumption by business and household sectors, with an overall targets of minus -15% for Summer and minus -10% for Winter. By and large, the overall targets have been reached for 2011 and early 2012. Yet, more serve electricity conservation will be needed for 2012 onwards as nuclear power will be literature off-line and at ground zero!

Strategies for the 2011 *Save Electricity Campaign* have the following initiatives:

- shifting production and consumption (daily production -cum- consumption re-scheduling) to minimize use of electricity during peak hours and shifting electricity load to non-peak periods,
- re-transportation and re-logistics: public transportation network re-scheduling and reduce frequencies, within the wider re-logistics regime for energy conservation,
- enhance efficiency of (no, or new LED) lighting with alternative conservation technologies,
- eco-friendly and energy saving lifestyle, like dressing simple: from *Cool-biz* to *Super Cool-biz*;
- air-conditioned temperature indoor adjusted from 25°C to 28°C
- off-peak production-consumption rescheduling is likely to be continued, especially in metropolitan areas for 2012 onwards.

Demonstrated by Japanese successful effort to save (-15% electricity in 2011/12) energy with social innovations to cope with the poverty of energy; the move towards a permanent extinction of nuclear power in Japan is the likely scenario, if there are more pro-active policy initiatives to nurture the growth, or the rejuvenation, of renewable energy: corporate sector and local municipalities have taken their goal to achieve some form of energy self-sufficiency by exploiting their geo-territorial advantages for renewable energy,

Hence, one obvious outcome of the disasters is a change of Japanese worldview on energy consumption, back toward for good conservation of all energy —this lesson should be learnt by many developed and developing for their energy security and global sustainability!

### **3. The Global (un-)Learning of Fukushima 3.11 for Energy Re-sourcing**

Responding to energy crisis, imports of foreign assembled solar energy system from overseas have been popular since 3.11. The Suntech (the world largest solar PVC producers in terms of volume) and the Yingli (one of the official sponsor for 2010 FIFA World Club), both from China, are becoming the major competitors, vis-a-vis, their Japanese counterparts' re-importing or re-directing renewable energy supplies from their overseas or local production lines, like photovoltaic cell (PVC) by Kyocera, Panasonics, Sharp and Sony.

Furthermore, many industrial initiatives have been taken up to re-making of, and techno know-how transfer for, new energy supplies. For example, Kobelco, an industrial conglomerate, is expanding its stream-driven generator, for exploiting small scale local geothermal energy (hot-spring exploited power generator, and heat-energy-exchange system), benefiting many localities where local small scale geothermal producers have been exploiting hot-spring spa for leisure and hospitality industry; the new initiatives extend their move for local alternative energy re-sourcing at large.

In response to the structural aspect of the poverty of energy supplies, the deregulation and new pricing mechanism for renewable energy in Japan is subsequently established after 3.11. In late August 2011, new law to promote renewable energy has been enacted and will become law in July 2012. Accordingly, all major 10 electricity suppliers like Tepco, Kepco, have to take, buy-in, the electricity supplied by small/local suppliers at the price set by the government: 42 yen / Kwh for Solar, 23.1 Yen / Kwh for Wind, 27.3 Yen/ Kwh for Geothermal . . .

Energy sensitive development projects, like small scale installations deriving hydro-, solar, wind, geothermal and bio-masses energy become growth sector not just for large industrial (energy) firm, but also for the survival of small and medium enterprises (SME) which have been dependent upon an outdated, not-so-smart, energy (electricity) energy grids dominated by ten major electricity companies in Japan. The new law enacted in late August 2011 for re-sourcing new energy should enable a liberalized regime of energy supplies and the availability of alternative energy consumption, at the very least at the local level.

The developmental goals for renewable energy are multi-folds, in addition to the demand management through energy efficiency gain and conservation new

technologies application in production, consumption and exchanges, within a wider policy context of CO<sub>2</sub> emission reduction originated from the (post-) Kyoto Protocol. All the post 3.11 policy initiatives aim for the increasing share of renewable energy from less than 10% (2010) of the total electricity supplies to 20% (or more) for year 2020. Indeed, it is a paradigm shift from nuclear to clean and renewable ones of energy re-sourcing globally, regionally and locally. The energy regime change in Japan after 3.11 is as follows:

**Energy Development Scenarios in Japan: pre- and post- 3.11 Disasters**

	<b>Nuclear</b>	<b>Fossil Fuels</b>	<b>Renewable: Solar, Wind, Geothermal, etc.</b>	<b>Conservation + Efficiency</b>
2010 (2011) actual	28 (10)	60 (LNG:39.5)	10	3
2010-planned for 2030	53	26	21	0
Post 3.11 Scenarios	0–10	50–65	25–30	10–15

More specific for nuclear energy, there were 436 nuclear power reactors in the world in 2011 and 57 more were in commissioning, building or completing. Here, the sudden-death of nuclear power in Japan is indeed historical, compared with the planned de-commissioning of nuclear power in Germany in 2022 and the related debates in European countries. But oppositely there is euphoria for building more nuclear power (plants obviously not just) for civilian use in:

- BRICS (Brazil, Russia, India, China and South Africa) countries for hyper-industrialization and
- Developing countries in the conflicting zones like Pakistan, India, and the Middle East.
- In Southeast Asia, nuclear power is more than welcome by most ASEAN member

Paradoxically against the sudden-death of nuclear energy in Japan, Japanese government through its bilateral aids and technology transfer initiatives, in addition to trading supports,

Japanese nuclear power plant builders, like Toshiba, Hitachi and Mitsubishi Heavy Industries alike are still being commissioned to develop nuclear power plants around the world, particularly in ASEAN countries: Indonesia, Malaysia, Thailand, and Vietnam.

Perhaps the 3.11 disasters have never been learnt by Japanese business, trading and diplomatic communities once the risks and disasters are externalized territorially

and for export-oriented growth; juxtaposing strong competition between / among rival nation states in East Asia: hyper-industrializing giants of South Korea and China, geo-political position of newly energizing Russia and the unpredictable solo communist North Korea.

Obviously, the contradictions and controversies on nuclear power development will have security ramifications and geo-political consequences (not if but) when another nuclear fall-out occurs in those hosting (less developed) counties—like Japanese 3.11 history, multiple disasters are in waiting . . . . And nuclear power in the geo-politics of energy re-sourcing will not be withering away, but be more problematic for human survival in the decades to come!

After almost 18 months of debates over the nuclear energy controversies, Japanese Diet (parliament) in September 2012 supported a government panel proposal to phase out nuclear energy—contrasting the pre- 3.11 energy development plan for raising nuclear power supplies to 50% of the total energy sourcing by 2030. But the suggested deadline for the nuclear power phase out for 2040 is questionable due to the economic and technical difficulties in terms of re-sourcing back to fossil fuels (coal, gas and oil) and acquiring renewable (solar, wind and bio-fuels) ones; the resumption of the building for a new nuclear power plant at Amori prefecture in mid-September 2012 is contradictory to the policy vision for nuclear free Japan—what most observers worry about!

More important, Fukushima 2011.3.11 has strong ramification beyond Japan; not least as Germany's *Energiewende* (Energy Change) for a rapid exit from nuclear energy by 2022 and strong initiatives for enhancing energy efficiency and new re-sourcing for renewable energy. The move towards new clean -cum- renewable regime of energy re-sourcing is also juxtaposing new energy initiatives taken up by European-wide stakeholders.

The 2011. 3. 11 Fukushima Crises remake the course for not just energy security but the sustainability for all—United Nations' new initiatives for *Sustainable Energy for All* (United Nations 2011) announced goal to double the share of renewables in the energy mix by 2030.

More specific, the new modus operandi is the “twining” of energy efficiency (enhancement) and a shifting for the renewable: many countries (e.g., USA) and regional bodies (like the EU) are beginning to link the two through targets and policies along the roadmap for sustainable energy security—questing for the interlinkages among energy alternative access, energy efficiency improvements, and renewable energy deployment (REN 21, 2012: 15).



#### 4. Clean Water and Food Supplies in Hyper-Modernizing World Cities?

The Earth has many water resources: about 70% of the Earth's surface is water-covered. But sea water accounts for 97.5%—salt water is filled with salt and other minerals, and humans cannot drink this water; though expensive desalination-distillation is available. The remaining 2.5% is fresh water: 2% of the water on earth is glacier ice (could be melted for drinking) at the North and South Poles but it is too far away from people. The emerging challenge is obvious that human society uses only less than 1% of the Earth's (fresh) water; how to conserve (reduce, re-use and re-cycle) the precious fresh water resources is the survival challenge for (post-) modern society—policy initiatives for Integrated Water Resource Management (IWRM) and practices for Capacity Building should be in place, to provide a basic framework and action repertoire for clean-water-for-all (Leidel, et al. 2012).

Fresh drinkable water supplies will determine human survival! Conflicts are usually arising from water and food crises, driving the propensity for violence and war . . . . In actuality, access to safe and climate resilient drinking-water resources, as well as sanitation, is increasingly critical in an era of continued, urbanizing, population growth under the Climate Change—Ensuring access to safe, resilient and clean water and sanitation, particularly for the world's poorest population and disadvantaged groups, will accelerate attainment of multiple environment and health-related goals for sustainable development (WHO 2012). This calling has been made for decades in development literature and donor-agencies' advocacies in (and still) meetings after meetings . . . . In fact, one of the United Nations (UN) Millennium Development Goals (MDGs; 2005–2015) is to halve the proportion of the population without sustainable access to safe drinking water and basic sanitation; and in Asia Development Bank (ADB) policy calling: *Attaining Access for All: Pro-Poor Policy and Regulation for Water and Energy Services* (ADB 2010). Hence, ADB's water and energy policies also explicitly embody its goal of achieving poverty reduction.

Creating the supportive conditions for pro-active policy for fostering green economy in the course of sustainable development and poverty eradication, and along the UNMDG is the key calling of Rio + 20!

Feeding global population, particularly to those poor-to-poorest people, is a daunting task, challenging the humanity in the last two centuries! Collaborating with the framework of the Rio + 20, the promotion of sustainable food systems (from agriculture to food retailing) is recently undertaken by United Nations' FAO-UNEP in 2012, aiming to enhance resource efficiency and clean consumption-production along the food value-supplies chains, while ensuring food security. The programme will involve all producers, retailers and consumers, and their agencies. Supported by

14 national governments, United Nations Conference on Trade and Development, UNDESA, eight NGOs and three international business organizations that together represent 325 firms, the FAO-UNEP-led Agri-food Task Force on Sustainable Consumption & Production (SCP) works to create knowledge platforms to foster public-private and business-to-business partnerships for sustainable goals (UNEP 2012: 35).

If the scarcity of water has a natural cause, the food shortage is human-made, mostly thanks to capital and finance industry in advanced capitalism. When seemingly everything has a market price is challenged by progressive forces, like David Harvey (2010), Michael Sandel (2012) and Stiglitz (2012). Global food crisis is a chronic one, with the under-supplied -cum- over-priced food; all threatening food (and commodities) security. Inadequate food supplies and inequitable distribution have been a global problem for long; much even worse when water and foods are being traded in terms of future commodities (hedging) exchanges, under a regime of global finance capital: seasonal and cyclic rise-and-fall of the commodities pricing has been replaced by calculative-speculation and hence price volatility—mostly beyond the parameters of normal supplies and demands in reality. More specific, it is the two-decade-long global “financialization” of food supplies system by a rapid growth of financial (de-)investment (-cum- liberalizing-deregulation) in agri-food business within and beyond the derivatives (of commodities trading) markets (Clapp & Helleiner 2012).

Under the same capital regime, the threat now is the “derivatives” of water to global finance capitalist speculation . . . . By the same token, adequate supplies of clean water and food enabling better health conditions are the important benchmark of sustainability of urban policies taking account for social equity, environment, and development—fair globalization(?).

But the Rio + 20 outcome document is just some form of consensus building but far providing the directional (with vortex), comprehensive, guide for the rocky journey towards sustainability.

But we are in a hyper-modernizing *modus operandi* under global(ization) of advanced capitalism, highlighted by urban dualism with the “divided” cities; far from developing an equitable and better society, the hyper-modernism in globalization has produced more social disasters in the period 1960s to 1990s than ever before (Lai 2011).

In spite of the achievement of poverty alleviation that of halving the number of people still living on less than \$1 a day by 2015 as stated in the UN’s Millennium Development Goals

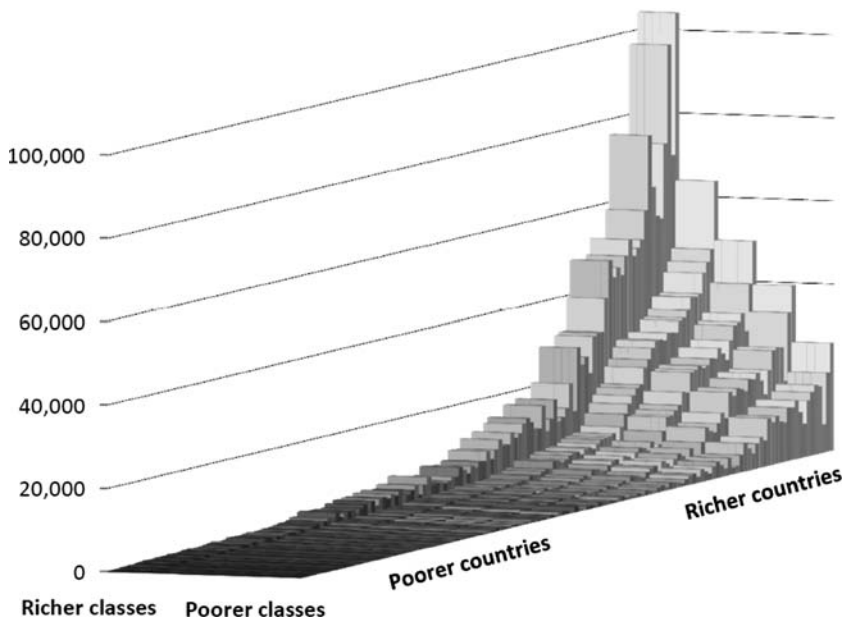
(Soros & Abed 2012), recent studies confirm the continued worsening of global inequality, over the last half century! Highlighting the polarization of life chance

and differential impact of economic liberalization, a recent study tracks the trend of global income inequality and confirms that global inequality is still the dominant trend for the last few decades (Ortiz & Cummins 2011: 11–19; see Fig.1)—using a Power-Purchasing-Parity (PPP) dataset in constant 2005 international dollars to measure the distribution of world income from 1990 to 2007: while the overall picture of global inequality improves under the PPP measure, as compared with the market-exchange rate (where all national income estimates are compared in constant

**Figure 1 Summary Results of Global Income Distribution by Population Quintiles, 1990–2007 (or latest available) in PPP constant 2005 international dollars**

	Global Distribution (%)		
	1990	2000	2007
Q 5	75.3	74.4	69.5
Q 4	14.9	14.2	16.5
Q 3	5.4	6.3	7.8
Q 2	3.0	3.4	4.2
Q 1	1.5	1.7	2.0
# of observations	99	127	136
% of global population	86.1	91.1	92.4
% of global GDP	85.3	87.4	88.6

(Source: Ortiz & Cummins 2011, p.16)



**Figure 2 Visualization of Global Income Distribution, 2007 (or latest available) in constant 2000 US dollars**

(Source: Ortiz, Isabel & Matthew Cummins 2011, p.13)

2000 U.S. dollars), the data still confirm severe income disparities. In 2007, the top 20% of the world owned 70% of total income compared to just 2% for the bottom 20%. And the poorest 40% of the global population increased its share of total income by an insignificant 1.7% in the period 1990 to 2007. Furthermore, Milanovic (2005, 2009) and Cornia (2003) confirm the historical growth of global income inequality since 1960s (to 2002, most updated data available; see Fig.2). In all, we can conclude that, irrespective of method of measurement on global income disparities, global income inequality remains exceptionally high throughout the post World War II modern history.

Notwithstanding that all of these are the consequences of the globalization project! Not without exception, all developing economies aided by transnational corporations networking have been integrated hierarchically into the global system of capitalism, and the globalizing process of integration widens the gaps and causes socio-economic divisions and divides between communities, countries, and regions. Even the neo-liberal economic ideologies—oriented international bodies, like the Organisation for Economic Co-operation and Development (OECD) recently questions the globalization-driven global problems, aiming to re-examine the global mitigation for poverty and development problems—shortfall of bilateral and multi-lateral aid for developing economies in the midst of global change (<http://www.aideffectiveness.org/>).

As the (since 2008) global financial crises continues, the fundamentals of advanced capitalism have not be altered much. Sadly, global food insecurity is worsening but the outcome of the Rio + 20 had not addressed it either . . . .

## **5. Sustainability for Whom in/beyond 21<sup>st</sup> Century?**

Haunted by the Fukushima crises and global financial crises (since late 2008); driving continued insecurity upon global development, there is irreversible trend and consensus towards alternative, clean, new and alternative energy re-sourcing: global new investment in renewable power and fuels increased by 17%, to a new record of USD 257 billion. Including hydropower projects of over 50 megawatts, net investment in renewable power capacity exceeded that for fossil fuels (REN 21: 7). But there are challenges ahead for steering the course for sustainability in and beyond 21<sup>st</sup> Century.

### **5. 1 Mainstreaming of Renewable Energy Resourcing since 2011?**

Against economic uncertainty, technological challenge and business inertia, the European Union built more renewable energy capacity in 2011 than ever before, and the new clean energy sector accounted for more than half of all newly installed

electric capacity in the region (since 2007)—more than 71% of total additions. At the global level, renewable energy continued to grow strongly in all end-use sectors—power, heating and cooling, as well as transport—and supplied an estimated 17% of global final energy consumption; for instance, in 2011, about half of the new electricity capacity installed worldwide was renewable based (REN 21, 2012: 7).

In response to the re-sourcing problem of, and for renewable, energy after the 3.11 disasters,

Japanese government adopted a new law for renewable energy re-sourcing (see above); this is in line with the related initiatives to promote sustainable power supplies. Historically, power generation policies are the most strategic-effective move for energy-paradigmatic shift:

Feed-in-tariffs (FITs) and renewable portfolio standards (RPS) are the most commonly used policies in this sector. FIT policies were in place in at least 65 countries and 27 states by early 2012. While a number of new FITs were enacted, most related policy activities involved revisions to existing laws, at times under controversy and involving legal disputes. Quotas or Renewable Portfolio Standards (RPS) were in use in 18 countries and at least 53 other jurisdictions, with two new countries having enacted such policies in 2011 and early 2012. (REN 21 2012: 14)

More strategic for future sustainable development, it is the emerging industrializing economies (e.g., the BRICS) which have strong dynamism to shape global development. But the pro-active energy policy should be stressed here. The state policies for renewable future in general, renewable energy targets in particular, continue to be a driving force in shaping markets for renewable energy, despite some setbacks resulting from a lack of long-term policy certainty and stability in many countries—at least 118 countries (more than half of which are developing countries) had renewable energy targets in place by early 2012—up from 109 as of early 2010. (REN 21, 2012: 14).

More problematic, there are more words than actions for governing global-and-local re-sourcing for renewable energy. Global energy system has not been considered as global governance issue, if compared with health, peacekeeping and environment—pursuit of global energy governance has been almost a taboo in political and foreign policy circles (Karlsson-Vinkhuyzen, et al. 2012). Alternatively, there is urgency for such a transformation for strong and coherent governance at all political levels at global-and-local scales; but Rio + 20 could have provided a roadmap for achieving a sustainable energy future requires a revolution in the energy system.

## 5. 2 Questioning Global Summits' Success (or Fatigue) for Ecological Modernization

In spite of many United Nations' conferences so far in 21<sup>st</sup> Century: up to late 2012, global initiatives for sustainable development have not been strategic nor demonstratively policy -enforceable, especially in nurturing global green house gases emission limits after the Kyoto Protocol, enhancing Biodiversity and Sustainable Development. Historically, the UN Climate Change Summit in Copenhagen (COP 15; 7–18. December 2009) disappointed not just environmentalists and political leaders, but global society at large, by failing to produce a legally binding treaty on reducing greenhouse gas, carbon dioxide (CO<sub>2</sub>). Seemingly, it is also a double-failure of the United Nations' initiatives on Climate Change for both the Bali Conference on Climate Change (3–14. December 2007) and the COP 15 (See <http://unfccc.int/2860.php> and [http://unfccc.int/meetings/cop\\_15/items/5257.php](http://unfccc.int/meetings/cop_15/items/5257.php).). More specific, the post-Copenhagen preparative meetings for United Nations Framework Convention on Climate Change (UNFCCC) have been repeatedly toning down for a “flexible” and “comprising” approach for achieving something just for non-legally binding agreement for Cancun (Mexico) Climate Change Summit (COP 16), 29. November to 10. December 2010—while the next hope will be another round of talks for Climate Change Summit in South Africa 2011 (Lai 2011). But the real question is how to contain the +2 degree Celsius without concrete target and binding agreement; or just another round of talk?

Similarly, the “soft-targeting” biodiversity development without strong sanctioning-incentive mechanism is the key policy achievement (?) for the CBD (COP 10) in Nagoya October 2010. Yet, the CBD is a compromised form for the contradictions between economic developmentalism and biodiversity: though it argues that functional aspects of bio-localism need to be strengthened but the question of how to pursue for biodiversity (the nation states' commitment in terms of policy and concrete targets) for sustainable development is still open.

Perhaps more and more global summits (2010 Nagoya Convention on Biodiversity and Rio + 20 in 2012, and more until another apocalyptic disaster?) are needed prior to the consensus building and formation of the global will for the (dying?) human species and for ecological urban-modernization—But we are running out of time!

Climate change is especially intertwining with a global-regional-local energy crisis, with the excess use of, and dependency on, the carbon emission fossil fuels but is exacerbated by the under-investment and development for renewable energy. The inertia against “the global solution for global problem” is ironically demonstrated also by well participation of the emerging economies, like the BRICs and the once reluctant participant for global governance for climate change, U. S. A.

Here, the role of BRICs is particularly critical in shaping global warming that since 2007, the BRICs countries, representing one-fourth of the world GDP, have contributed to over 30% of global energy use and 33% of CO<sub>2</sub> emissions from fuel combustion (IEA 2009 a/b; Olivier & Peters 2010). At the very least, they are the growth engines, requiring more energy, emitting more greenhouse gas, for (or destroying?) global development in the last decade and for the coming ones as well.

The timely crucial issue is how societies around the world manage hyper-urban-modernization with clean and renewable energy re-sourcing, with less carbon footprints or neutrality, during climate change crisis—some form of smart city with sustainable energy re-sourcing locally is urgently required. In other words, the paradigmatic shift requires more than technological change per se; normative-ethical questions and choices to foster the shift towards ecological modernity are deemed urgent necessary.

Obviously, problems of and solutions for climate change and sustainability are more than politics and technologies per se; the contradictions and mitigating strategies are socio-political therefore need “politicking”. But we should be reminded that too much of the concept of ‘sustainable politics’ castrates sustainability politics. It ignores the fact that sustainability politics is precisely not about climate but about transforming the basic concepts and institutions of first, industrial, nation-state modernity. Here, the calling is for a transformation of our life world (Beck 2010: 256). Hence, the new worldview for sustainable development should be a fundamental shift of developmental course for the greening of economy and society—reflexive ecological modernization for global-cum-local sustainability.

### **5. 3 Bringing People Back to Sustainable Lifestyle(s)—LOHAS in Action!**

Global population growth dynamics will have strong implication for sustainable development.

Regional ageing for the developed economies and hyper-urbanization for the developing, emerging economies should be noted here. More than two-thirds of the global population will be living in cities by 2050. The rapid rate of urban growth has created enormous challenges.

Historically, cities create not just opportunities-driven hope but also concentrate health hazards and risks. Good urban governance is a must for coping urbanization crises, say the least is the swelling number of slum-dwellers (more than 800 million people in 2012), mostly in developing economies (WHO 2012). Obviously, there is urgent need to taking up slum improvement for better health with universal access to access to clean water, food, energy and basic utilities.

Eco-friendly policy and practice therefore should be promoted; bring back those socio-economic practices for sustainable development, with reference to good

culture, ethics, traditions and wisdoms for preserving human resilience and ecological vitalities.

Modern lifestyle(s), represented in terms of production, consumption and exchange, has been charting the course of (un)sustainable development; over production-consumption and wastage of energy are part of the problem. Historically, nuclear energy was once (for a few decades) considered as safe, reliable and sustainable energy source; but the 2011. 3. 11 Fukushima disasters (earthquake, tsunami and nuclear power plant “accidents”) redefine what is (not) sustainable (re-) sourcing of energy and human destiny, in the repeatedly apocalyptic terms after Three Miles Island (1978) and Chernobyl (1986) . . .

“Enough is enough” for the unmanageable risks of nuclear power (Macer, et al. 2012) therefore Germany planned to decommission all nuclear power plants by 2022 and Japan, likely by 2040. Correspondingly there is a new call for, or the rejuvenation of, the less-energy -cum- carbon neutral lifestyle, represented by the LOHAS (lifestyle of health and sustainability) movement. At the global level, international agencies’ initiatives under the framework of the United Nations and European Union are becoming important, as a last resort! Hence, the greening of market may attribute to individuals’ commitment to *Save the World*—with the motto of *Think Globally and Act Locally*, for individual’s health and quality of life for LOHAS. Under a new global green mainstreaming, the quest for sustainable development has shaped the market conditions significantly (Emerich 2011, Lai 2010).

To recapitulate, there are obviously many questions to be raised for pursuing sustainable course of actions along the ecological modernization frontiers; but prompt actions are critical and imminent, not least those can effectively facilitate the greening economy and socio- equitable fair development, and fostering the unique yet differential (ecological reflexive) modernization processes—for another socio-economic ecological miracle(?).

## Reference

- Asia Development Bank (ADB 2010). *Attaining Access for All: Pro-Poor Policy and Regulation for Water and Energy Services*. Manila: ADB.
- Beck, Ulrich (2010). Climate for Change, or How to Create a Green Modernity? *Theory, Culture & Society*. 27(2–3): 254–266.
- Clapp, Jennifer & Eric Helleiner (2012). Troubled Futures? The Global Food Crisis and the Politics of Agricultural Derivatives Regulation. *Review of International Political Economy*, 19(2):181–207.
- Cornia, Giovanni A. (2003). *The Impact of Liberalization and Globalization on Income Inequality in Developing and Transitional Economies*. Working Paper No.14. Geneva:



International Labour Office.

- Emerich, Monica M. (2011). *The Gospel of Sustainability: Media, Market and LOHAS*. Champaign, IL: University of Illinois Press.
- Harvey, David (2010). *The Enigma of Capital and the Crises of Capitalism*. Oxford. OUP.
- International Energy Agency (IEA, 2009 a). *World Energy Outlook 2009*. Geneva: IEA.
- International Energy Agency (IEA, 2009 b). *CO<sub>2</sub> Emissions from Fuel Combustion – Highlights 2009*. Geneva: IEA.
- Karlsson-Vinkhuyzen, S. I., N. Jollands & L. Staudt (2012). Global Governance for Sustainable Energy: The Contribution of a Global Public Goods Approach. *Ecological Economics*, 83: 11–18.
- Lai, On-Kwok (2011). Synergizing Socio-Technological Innovations in Risk Society? *Kwansei Gakuin University – Social Sciences Review*, 16: 16–36.
- Leidel, M., S. Niemann & Hagemann, N. (2012). Capacity development as a key factor for integrated water resources management (IWRM): improving water management in the Western Bug River Basin, Ukraine. *Environmental Earth Sciences*, 65(5):1415–1426, DOI: 10.1007/s 12665–011–1223–5.
- Macer, Darryl, et.al (2012). *Ethics of Nuclear Energy Technology*. Draft Report for UNESCO-Bangkok: [http://www.unescobkk.org/fileadmin/user\\_upload/shs/Energyethics/ECCAPWG 12 rpt 4.pdf](http://www.unescobkk.org/fileadmin/user_upload/shs/Energyethics/ECCAPWG 12 rpt 4.pdf)
- Milanovic, Branko (2005). *Worlds Apart: Measuring International and Global Inequality*. Princeton: Princeton University Press.
- Milanovic, Branko (2009). Global Inequality and the Global Inequality Extraction Ratio: The Story of the Past Two Centuries. *World Bank Policy Research Working Paper 5044*. Washington D.C.: World Bank.
- Olivier, J. G. J. and Peters, J. A. H. W. (2010). *No Growth in Total Global CO<sub>2</sub> Emissions in 2009*. Report of PBL (Netherlands Environmental Assessment Agency), Den Hague: PBL. <http://www.rivm.nl/bibliotheek/rapporten/500212001.pdf>
- Ortiz, Isabel & Matthew Cummins (2011). Global Inequality: Beyond the Bottom Billion: A Rapid Review of Income Distribution in 141 Countries. *UNICEF Social and Economic Policy Working Paper*, April 2011. Access on 28.Sept.2011: [http://www.unicef.org/socialpolicy/files/Global\\_Inequality\\_REVISIED\\_-\\_5\\_July.pdf](http://www.unicef.org/socialpolicy/files/Global_Inequality_REVISIED_-_5_July.pdf)
- Renewable Energy Policy Network for 21<sup>st</sup> Century (REN 21, 2012). *Renewables 2012: Global Status Report*. REN 21: <http://www.ren21.net/default.aspx?tabid = 5434>
- Sandel, Michael (2012). *What Money Can't Buy: The Moral Limits of the Market*. New York: Macmillan.
- Soros, George & Abed F. H. (2012). Rule of Law can rid the World of Poverty. *Financial Times*, 26. Sept. 2012.
- Sovacool, Benjamin K. and Valentine, S.V. (2012) *The National Policy of Nuclear Power*. London: Routledge. Chapter 5(101–131) on Japan.
- Stiglitz, Joseph (2012). *The Price of Inequality*. London: W. W. Norton.
- United Nations (2011). Sustainable Energy for All. UN: <http://www.sustainableenergyforall.org/>
- United Nations Conference on Sustainable Development (UNCSD, 2012). *Rio + 20 The Future We Want*. <http://www.un.org/en/sustainablefuture/>

United Nations Environmental Program (UNEP, 2012). *The Global Outlook on Sustainable Consumption and Production Policies*. UNEP: [http://www.unep.fr/scp/go/pdf/Global%20Outlook%20on%20SCP%20Policies\\_full\\_final.pdf](http://www.unep.fr/scp/go/pdf/Global%20Outlook%20on%20SCP%20Policies_full_final.pdf)

World Health Organization (WHO, 2012). *Measuring Health Gains from Sustainable Development*. Geneva: WHO. [http://www.who.int/hia/green\\_economy/en/index.html](http://www.who.int/hia/green_economy/en/index.html)