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Book Review
Just Transitions: Explorations of Sustainability in an Unfair World

A review of Mark Swilling and Eve Annecke: Just Transitions, United Nations University Press, Tokyo, Paperback Edition, 2012

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Introduction

Swilling and Annecke (2012, p. xiv) state that "the balance between synthesis and analysis" is necessary to critically understand the problems of sustainability, and to formulate creative problem solving. The shift from understanding sustainability problemsinto creative solutions through democracy and innovation is the *just transition* that the authors promote throughout the book. This book review dissects chapters of the book based on the similar spirit, i.e. to assemble pieces of sustainability problems presented and critically assess the links between the problems and the solutions offered in the book.

As in the book, this review consists of three sections that are dedicated to discussionswith one additional section for the conclusion. In the "review on complexity, sustainability, and transition," a discussion about how complexity theory and reductionism have affected actions and the outline of possible solutions offered by the authors of the book, is the focus of the section. The section "review on rethinking development" presents a discussion about how the authors link the role of states in the transition from agrarian to industrial economies and ecological economic theory that the authors hope will foster innovations.

The section "review on from resource wars to sustainable living" focuses on a discussion about what conditions mark an*unjust transition* and an assessment on the links between the solutions offered to move towards a*just transition* and the problems of sustainability. The 'conclusion' section covers the concluding remarks, suggestions on how to improve the book, and an agenda for future research in sustainability.

Review on complexity, sustainability, and transition

In Chapter One, the authors of the book argue about the need to break away from reductionism, the necessity to embrace the complexity theory, and the urgency to fuel sustainability-related transitions.An analysis based on reductionism, as stated in the book, is

> …*basically an explanation of a complex reality which depends on the reducilibility of the multiplicity of components of this reality to a few basic elements which are deemed a priori to hold greater explanatory weight than any others in the system.* (p. 5)

Therefore, in the context of sustainability that covers people, planet and economy, an analysis based on reductionism searches for issues about people, planet and economy that have greater explanatory power than others with a goal to set a foundation of knowledge for predicting the future.

The authors of the book argue further that while the supposed power to predict the future is important to form basic assumptions in knowledge, other issues put aside can have other sides of truth (see pp. 5-11). In the case of sustainability, the few selected issues that form the basic assumptions of sustainability knowledge can lead to selected future. The future is stated as selected due to the determined nature of the paths for analyzing phenomena based on the basic assumptions. Other issues that contain other sides of truth can bring about the complex web of different people anddifferent economiesin the same planet and therefore, represent the complex system of sustainability.This complex system requires understanding of how people, planet and economy evolve through time with a goal to form the bases for negotiating transitions in different conditions towards a more sustainable future, the kind of future that sustainability initiatives attempt to reach.

To this point of argument, the authors of the book promote the importance to consider the complexity theory. The features of complexity theory are (see pp. 12-13):

1. It concerns about diverse elements that can be simple when viewed independently,
2. It covers the interactions between non-linear elements,
3. It recognizes the presence of various and simultaneous direct and indirect feedback loops of cause and effect relations,
4. It introduces open systems that continually interact with one another,
5. It has a distributed memory of evolution that form history and, later, the future behavior of the open systems,
6. It highlights on the quality of interactions between elements of the systems to shape the nature and behavior of the systems, and
7. It assumes the adaptive power of the systems that enable the systems to organize and reorganize without any intervention of an external agent.

The diverse nature of issues in sustainability that comprises the diverse systems of

people and economies within the same planet need solutions that are applicable to the diverse systems yet evolving towards the same goal for the same planet, i.e. a more sustainable future. Complexity theory introduces the world as a web of open systems that dynamically interact with one another while practicing the ability of each system to evolve through the organization and reorganization by considering the history as well as the nature and the quality of the interactions without any intervention of external agent. Under the complexity theory, sustainability is comprised of diverse open systems. These systems interact dynamically with one another, and organize and reorganize to evolve without loosing sights of the history as well as the nature and quality of the interactions with a goal to negotiate ways to progresstowards a more sustainable future. The fit between the complex nature of sustainability that involve different people and economies, and how complexity theory sees sustainability as a web of complex systems is the base ofpromoting the complexity theory as the foundation of transitions to reach a more sustainable future.

The authors of the book further the discussion of the importance of complexity theory in Chapter Oneby presenting current major initiatives that define the issues of sustainability and presenting the tendency towards 'unjusttransitions' in reaching a more sustainable future. In Chapter Two,the authors state that there are seven major documents that lead current sustainability-related initiatives (see pp. 26-28). The seven documents are first, the *UN MilleniumEcosystem Assessment*. The document depicts concerns about the degradation of the current ecosystem. The second document is the reports of the *Intergovernmental Panel on Climate Change* (IPCC) that confirm the presence of global warming. The third document is the *2008 World Energy Outlook* that promotes the need for alternatives to oil as oil is scarce and expensive energy.

The fourth document isthe UN *Human Development Report* that depicts the gaps between rich and poor countries that can hamper social cohesion and block people from reaching a decent quality of life. The fifth document is a report entitled *The Challenge of Slums* by the UN-HABITAT. The report highlights the significant number of people that represents urban poverty. The sixth document is the assessment by the *International Assessment of Agricultural Knowledge, Science and Technology for Development* (IAASTD). The assessment concludes that the sources of ecological degradation are modern, industrial and chemical-intensive agriculture that ultimately will compromise food security. The seventh document is a report by the *International Resource Panel* that depicts current heavy dependence on scarce energy resources and the increasing tendency of dependence. The seven documents cover aspects of life that include people, environment, and economy.

Topics of concern in the seven documents range from ecosystem, global warming, sustainable energy needs, urban sustainability problems, ecological degradation, and unrenewableenergy dependency. In essence, these topics bring about sustainability problems that are related to people, economy, and the planet. The presence and interconnectivity of the problems need perspectives that allow the consideration of and the acknowledgement of multidimensional efforts in sustainability. The complexity theory allows perspectives connectivity to form multidimensional efforts. The theory

represents the world as a complex and dynamic web of systems. Therefore, the complexity theory provides a philosophical framework that suits the multidimensional needs of sustainability problems.

In Chapter Three, the authors of the book further their discussions on transitions towards sustainability by referring to the financial crises. These crises have given a birth to better corporate governance and innovations in technology to empower the economy. The most important thought that the authors introduce in the chapter is "why are people able to benefit from the financial crises by creating better business conditions but unable or, perhaps, hesitate to benefit from the problems of sustainability by creating better links between people, environment and the economy?" This is a thought that ends the first part of the book. It stimulates the readers to think whether sustainability is important and whether the problems of sustainability have received appropriate attention that emerges from multidimensional perspectives.The following review discusses the importance of sustainability for states and evaluates the authors' opinions regarding how states treat sustainability problems.

Review on rethinking development

States are taking interventionist roles in leading economies from agricultural-based economies to industrial-based economies. Unfortunately, few states, especially those of developing economies, have the capacity to handle ecological as well as economic dynamics (see p. 83). The authors of the book argue that the incapability to link ecological changes and economic changes leads states to treat sustainability problems as separate issues. This kind of treatment is similar to reductionism. The consequence of this incapability, based on the previous criticism on reductionism, is that sustainability is a burden to the economy because it decelerate economy by requiring energy saving, recycling, and other preservations that can decrease productivity and shrink markets.

The authors of the book argue that sustainability can surpass economy growth through technological innovation (see pp. 96-104). Industrial-based economic growth bases its theories and actions on a belief that the Earth has infinite ability to support people and economic activities while the Earth has only finite ability. The consequence of this finite ability is observable from the compromised economic growth due to non-renewable energy use. This kind of energy becomes scarce and reaches the acceptable threshold of costs for productions and well-being. Instead of infinite continuous growth, states will see economy slows down. Sustainability promotes the use of renewable energy through technological innovation planned carefully by states. The level of intervention in implementation stages itself can vary between states. It depends on how stable states are and the forms of government.

The argument about the importance of sustainability-based economic development remains the focus of Chapter Five and Six.The difference from Chapter Four is that the later chapterspresent the discussion of two outstanding problems of sustainability that states attempt to handle but in unsustainable ways, i.e. urban sustainability problems

and food security. Along with the breakout of industrial economies, people tend to live in cities (see pp. 110-114).This urbanism creates demands on resources as well as producing highly valuable products and services. Technology and infrastructures play important roles in connecting the urban societies.

However, in many developing countries, partial connectivities of urban societies take form in widening slumps rather than sophisticated fully connected urban societies (p. 115). The extractions of raw materials as a result of demands from global urban societies give birth to new slumps because these areas depend on others' connectivities while leaving some countries with low-wage industries in and around the cities.Cities, then, create new poors as well as new rich. The gaps between the two economy classes creates gaps in resource consumptions. Overconsumption in some parts of the worlds and submarginal consumptions in other parts of the worlds. The authors of the book offer a solution that can spread wealth to the poor while directing the rich to work with less resources (p. 119). The solution demands states to evaluate the supporting ability of cities, or "metabolism" in the book, and consider innovations on the technical sides of the cities in order to distribute resources evenly. This solution is a different solution from merely saving energy although the saving itself is a good initiative that deserves appreciations.

Food securityin the age of urban societies is another problem that the authors of the book see as a problem that states should treat as multidimensional problemsinstead of treating it asseparate problems of sustainability and economy.Economy considerations on food security that include food price concern about, for example, extreme weather, declining supply, farming pattern shifts in developing countries (see p. 143).The remedy for food security problems, based on the economic perspective, is to increase production through chemicals, hybrid seeds, mechanical irrigation system, and farm land extensions (see pp. 144-146).

Innovations in food production have focussed on inputs of chemical fertilizer and industry-generated seeds. The only attention on land issues is to extend farm lands that the authors of the book describe as land grabs. This exclusive attention is considered as a lack of attention on land issues.The authors of the book argue that this lack of attention is unfortunate. The base of this argument is food production data that show declining agricultural growth rate when compared to the demands (see p. 147). Previous innovations based on chemical fertilizers and hybrid seeds to intensify farm land produce turn to be less than enough to meet the increasing trend of demands on food. The extension of farm lands and industrial control on the produce of those lands yield the same result.

The authors of the book promote the idea that negligence on soil condition has led to declining agriculturalgrowth rate.While trying to meet demands that have outstripped supplies, farm lands have exploited soils to the maximum. The consequence of this exploitation is the decreasing ability of soils to support food production (see pp. 148-149). However, serious analysis of soils remain in tremendous needs as global food production covers global farmlands. This is the point of which that the authors of the

book suggest that the problems of food production involve not only distribution and prices, but also soils degradation. Therefore, in order to reach food security, considerations on distribution and prices that form the economy aspects of food security must include attentions on at least a sustainability aspect, i.e. soils degradation. In brief, integrated economy and sustainability perspectives are the solutions offered.

So far, the authors of the book present that continuous growth through exploitation and distribution management are finite in nature. This finite nature is due to the finite ability of the planet to support human activities. Solutions offered, such as attention to soil degradation and technical innovations in cities, focus on rejuvenating the overall supporting ability of the planet. These solutions demand economiesthat are oriented to sustainability. Therefore, the authors promote sustainability-based economies that allow integrated multi perspectives in planning and implementation. The following section presents discussions about evidence that the authors of the book present to support their argument on sustainability-based economies and integrated multi perspectives.

Review on from resource wars to sustainable living

The first evidence presented is the resource war in Sudan. In Chapter Seven, the authors of the book give a vivid example of how aseverely struggling government intervenes into the supporting ability of its lands and negatively affect the life of the people. The lack of governance that characterizes the exercise of governmental power in the country due to a large endowment of natural resources makes human well-being depends on the mercy of those who have power. Those who have the power to make changes care about rapid economic change of their own groups of exploiting resources for short-term profits. Those who occupy the poor areas of the country have little attention for long-term well-being since their lives depend on the mercy of those who have the power to control resources (see p. 200). Short-term planning is the lifetime plan for the poors who have to flee from clashes with and between powerful groups.

Sudan is the example of severe governmental impact that comes from negligence on governance and care for the well-being of the people in favour to rapid economic change and power maintenance. The authors of the book propose, or perhaps hope, that when the situations get extremely severe, the people will be able to use the momentum to reverse the situations and start caring about their long-term fair and sustainable well-being (p. 210). This solution is similar to that in the discussion about economy and sustainability in which the authors argue that when the economy performance becomes incredibly low, people should use the momentum to fuel change and innovations towards sustainability-based economy. Changes and innovations require integrated multi perspectives as suggested in complexity theory. To this point, the authors align the main theory supported in the book, i.e. complexity theory, with the solutions offered.

In Chapter Eight,the authors provide another type of example, i.e. South Africa. The

authors present South Africa as a contrasting from yet similar example with Sudan. It is a contrasting example mainly because the government of South Africa is strong enough and run well. Yet, it is a similar example because the country is a resource rich country and a significant exporter of natural resources (see p. 211). As a resource rich country and an exporter of resources, the temptation to depend on those resources for rapid economic changes is strong. However, proven political stability in South Africa seals the presence of governance and the democratic government in the country. The legitimate and widely-accepted presence of the government in the country has minimized the possibilities of wars for those resources.

Another difference between South Africa and Sudan is in the area of innovation.Policy makers in South Africa have started to discuss the risks of depending on those resources. The fuels of South Africa's economy growth are agriculture, forestry, and fishing productions, natural resource-based industries, mining and quarrying, natural-resource-based industries, other industries including those that are labour intensive (see p. 217). The majority of the fuels is limited or unrenewablein nature. Resource depletion is a reality because demands are incredibly higher than supplies. Once the costs of extracting the resources becomes higher than the prices due to the depleting resources, employment cuts will be eventually a reality since subsidies from the state will hold the industries only for a limited time. Therefore, the dependency on depleted natural resources, including the hope to continuously produce cheap energy to fuel the economy is a questionable strategy for the country.

Innovations that lead to renewable and sustainable energy and economy activities are the solutionsoffered in the chapter. Funding to encourage innovations is available in huge amount from public and private investment funds (see p. 243). However, the authors also express their concern regarding the projects funded since other important aspects that constitute the "metabolism" of South Africa receive little attention (see p. 243). The concern functions as a reminder that the problems of sustainability are complex. Integrated multi perspectives suit the complex nature of the problems when policy makers manage solutions into a national grand strategy and plans on how to continue economic growth while resources that are important to fuel the growth are depleting.

In Chapter Nine,the authors discuss the use of empirical data to set the strategy and policies of a city in South Africa, i.e. Cape Town, and the transitions to a more sustainable city. This is the purpose for specifically discussing Cape Town in the book (see pp. 278-279).In the chapter, the authors present that policy makers have started to form strategies based on data about the supporting ability of Cape town to support human activities. The authors have stated from the beginning of the book that the important matter to handle sustainability problems is how to turn the problems into workable problems based on well-informed integrated perspectives on the supporting ability of the countries or cities (see p. xxi).Therefore, the authors have supported their argument that in the case of urbanism, integrated solutions based on analysis on the source, distribution and consumption of resources of the cities is an argument workable in realityeven though the need to evaluate the meaning of the solutions

remains central.

The authors of the book end the third and the last part of the book by presenting Lynedoch Eco Village, a village that is 30 minutes drive from Cape Town. The purpose stated to discuss about Lynedoch is to share experiences in building a sustainable place of living that gives the people a *just transition* to sustainability (see pp. xxi, 307). The authors want to demonstrate that initiatives to build similar places are achievable. At the same time, the authors warn that quantifying the result of investments in human resources is impossible and that adaptive solutions based on knowledge about interconnectivities within the place is important. The authors state that by sharing the experience of Lynedoch, they conclude the book with their first hand experience that the readers hopefully able to differentiate from abundance existing calls for actions that are related to sustainability.

Conclusion

The authors of the book have presented their positions within the theoretical world of sustainability as well as presented the examples that support their arguments. The need for the theory of complexity in viewing the problems of sustainability is linked to the examples of urbanism and the roles of government in cities and country levels. The examples range from examples of fragmented solutions that move away from sustainability and the hope for continued economic growth, to the examples of emerging initiatives that give sustainability and economic growth chances to benefit people and the planet.

A suggestion that the authors may want to consider is to include other countries or cities as examples. The presence of more global examples can reveal the interconnectivity of sustainability problems in one country to another that leads to the need for global interconnected actions based on analysis on the sources, distributions, and consumptions of the resources that exist in the countries or cities. By presenting examples that reveal global problems of sustainability, the authors can persuade global policy makers who represent countries to use the condition as a momentum to shift to sustainability-based economy for actualizing the hope for continued economic growth.

As for researchers of sustainability, the book challenges those who support reductionism while encouraging the integration the complexity theory in research on sustainability. Further theoretical reviews between these two schools are important to disclose the differences and benefits of each school in full range for students and policy makers. While the theoretical reviews have their legitimate positions within academics' and practitioners' worlds, the later will need further field analysis on how to turn the sustainability problems into workable problems that are far from merely utopian demands to the world.