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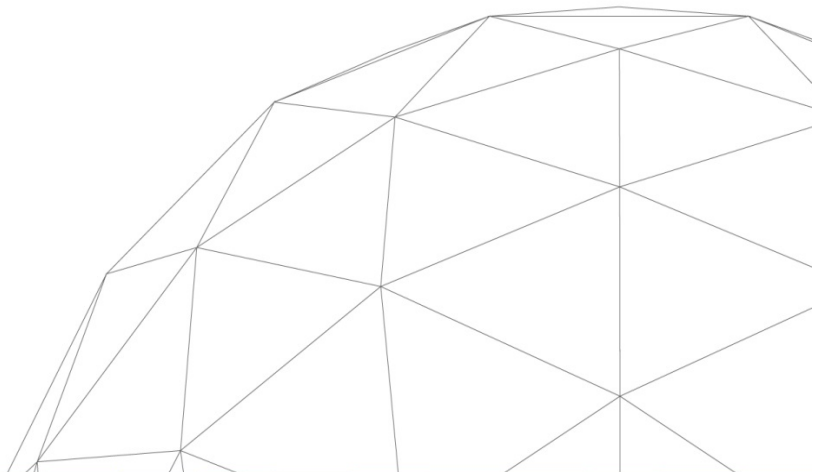
DNC 2015 | GLOBAL CHANGE
SDGs NEXUS APPROACH

POSITION PAPER – Extended Summary

A Nexus Approach to Urban and Regional Planning Using the Four Capital Model of Ecological Economics

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Day 2 | Urbanization



A Nexus Approach to Urban and Regional Planning Using the Four Capital Model of Ecological Economics

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Summary

Ecological economics views our world as an interconnected complex system of humanity embedded in the rest of nature. It recognizes four basic types of capital assets necessary, in a balanced way, to produce sustainable well-being of humans and the rest of nature. These include: (1) built or manufactured capital; (2) human capital (e.g., human labor and knowledge); (3) social capital (e.g., communities, cultures, and institutions, including the financial system) and natural capital (resources and natural ecosystems and their products that do not require human activity to build or maintain). This paper lays out some basic principles of *Ecological Economics* as a basis for developing a nexus approach to urban and regional planning and design. In particular, finding solutions to the major issues of climate change, urbanization, and population growth in an integrated way will be key to designing a sustainable and desirable future.

The *Ecological Economics* framework expands the definitions and connects these critical issues. It focuses not only on population size, density, rate of increase, age distribution, and sex ratios, but also on access to resources, livelihoods, social dimensions of gender, and structures of power. New models have to be explored in which population control is not simply a question of family planning but of economic, ecological, social, and political planning; in which the wasteful use of resources is not simply a question of finding new substitutes but of reshaping affluent lifestyles; and in which sustainability is seen not only as a global aggregate process but also as one having to do with sustainable livelihoods for all within the safe operating space of the global ecological life-support system.

In addition a new vision and goals are needed that go well beyond the narrow and inappropriate use of GDP growth as the primary policy goal. There is broad emerging agreement about the overarching goal that should guide sustainable development. There are many ways of expressing it, but the essence is “a prosperous, high quality of life that is equitably shared and sustainable”

There are three elements to this goal that cover the three components of sustainable development – the economy (a high quality of life or well-being), society (equitably shared), and the environment (sustainable – staying within planetary boundaries). There is also the understanding that all three of these elements are highly interdependent and must be satisfied jointly. It is no good to have a high quality of life for an elite few that is not equitably shared or sustainable, or a sustainable but low quality of life where everyone suffers equitably, or a high quality of life for everyone that will collapse in the future. We want all three together in an integrated and balanced way and any one or two without the rest is not sufficient.

It is also important to recognize that the economy is embedded in society, which is embedded in the rest of nature and that these three elements are extremely interdependent. We can no longer treat the economy separately, without considering its dependence on society and the rest of nature.

An integrated, nexus approach to urban, regional, national, and global planning must include better, more appropriate measures of sustainable human well being. These measures need to account for

the effects of equity, and social and natural capital. The Genuine Progress Indicator (GPI) is one such indicator that shows that in the US and globally, growth has been “un-economic” (not improving genuine progress) since about 1980 if one accounts for the social and environmental costs. However, GPI includes only costs and better accounting for the positive contributions of social and natural capital and ecosystem services is also required. These benefits far exceed conventional GDP.

Scenario planning is one technique that can be used to implement these ideas at community, national, and even global scales, but with the added feature of public opinion surveys around the scenarios. Scenario planning creates an ability to discuss and develop consensus about what social groups want. Predicting the future is impossible. But what we can do is lay out a series of plausible scenarios, which help to better understand future possibilities and the uncertainties surrounding them. Scenario planning differs from forecasting, projections, and predictions in that it explores plausible rather than probable future, and lays out the choices facing society in whole systems terms. There is no simple answer to how to achieve a nexus approach to urban and regional planning, but a critical first step is to develop a shared vision of the goal for the system. Scenario planning incorporating the four capital model of ecological economics is one way to do this. There is also the growing possibility to employ online computer games and crowd sourcing to build, evaluate, and communicate scenarios.

Creating a sustainable and desirable future will require an integrated, systems level redesign of our cities and our entire socio-ecological regime and economic paradigm focused explicitly and directly on the goal of sustainable quality of life and well-being with minimal waste rather than the proxy of unlimited material growth. It will require the recognition and measurement of the contributions of natural and social capital to sustainable well-being. It is a design problem on a massive scale. An integrated, nexus approach to urban and regional planning and design must be a central component of this process.



Dr. Robert Costanza is a Chair in Public Policy at Crawford School of Public Policy. Prior to this, he was Distinguished University Professor of Sustainability, in the Institute for Sustainable Solutions at Portland State University. Before moving to PSU in Sept. 2010, he was the Gund Professor of Ecological Economics and founding director of the Gund Institute for Ecological Economics at the University of Vermont. Before Vermont, he was on the faculty at Maryland and LSU, a visiting scientist at the Beijer Institute in Sweden, and at the Illinois Natural History Survey. Dr. Costanza is also currently a Senior Fellow at the National Council on Science and the Environment, Washington, DC, and a Senior Fellow at the

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Dr. Costanza received BA and MA degrees in Architecture and a Ph.D. in Environmental Engineering Sciences (Systems Ecology with Economics minor) all from the University of Florida.

Dr. Costanza’s transdisciplinary research integrates the study of humans and the rest of nature to address research, policy and management issues at multiple time and space scales, from small watersheds to the global system. Dr. Costanza is co-founder and past-president of the International Society for Ecological Economics, and was chief editor of the society’s journal, Ecological Economics from its inception in 1989 until 2002. He is founding co-editor (with Karin Limburg and Ida Kubiszewski) of Reviews in Ecological Economics. He currently serves on the editorial board of

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His awards include a Kellogg National Fellowship, the Society for Conservation Biology Distinguished Achievement Award, a Pew Scholarship in Conservation and the Environment, the Kenneth Boulding Memorial Award for Outstanding Contributions in Ecological Economics, and honorary doctorates from Stockholm University and the Ecole Normale Supérieure de Lyon.

Dr. Costanza is the author or co-author of over 500 scientific papers and 23 books. His work has been cited in more than 11,000 scientific articles and he has been named as one of ISI's Highly Cited Researchers since 2004. More than 200 interviews and reports on his work have appeared in various popular media.

His specialties include: transdisciplinary integration, systems ecology, ecological economics, landscape ecology, ecological modeling, ecological design, energy analysis, environmental policy, social traps, incentive structures and institutions

Working Paper