

## SUMMARY OF FIRST PLANNING WORKSHOP

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POLYTECHNIC INSTITUTE OF NYU

*Prof. Carl Skelton's conference room*

11:00 am to 3:00 pm

June 18<sup>th</sup> (Tuesday), 2009

*Prepared by Dr. Amit K. Maitra*

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### Participants:

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### Meeting Summary:

This summary describes the discussions and actions of the first planning workshop of the GCEPG/GSEED Projects of GLOSAS/GUS (hereinafter, the Projects). The meeting was held on Tuesday, June 18, 2009 at the Polytechnic Institute of New York University, Brooklyn, NY.

The Project members met in New York for the purposes of:

- 1) possible comments to be submitted to the US Environmental Protection Agency concerning the Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act.;
- 2) discussing possible collaboration with the *Fund for Global Environment and Conflict Resolution (The Fund)*, a partnership between Columbia University School of International and Public Affairs / Center for International Conflict Resolution (CICR) and the Ministry for Environment, Land and Sea of the Italian Government;
- 3) reviewing a variety of integrated and cross-sectoral studies on energy, environmental solutions and sustainable developmental policies, as well as collaborative initiatives

the Projects have undertaken with governments and leading political, academic and professional institutions worldwide;

- 4) discussing how best to leverage these studies, models, and collaborative projects to build smaller, more manageable modular components for researching:
  - a) The prevention and control of potential conflict in the use of natural resources with particular reference to China, Middle East, and North Africa
  - b) Environmental solutions and sustainable development policies in conflict and post conflict areas, based on the ongoing activities of the Italian Ministry in the Balkans, Iraq, Afghanistan, Peru, and Colombia as case studies, which would look into illicit land use for drug trade and terrorist efforts
  - c) Climate change and its relationship to international security as a whole with regards to water scarcity and food security.
- 5) receiving briefings from Andrea Bassi and Takeshi Utsumi on their respective economic and integrated system modeling projects sponsored by several academic and professional institutions worldwide, such as the National Commission on Energy Policy, Bipartisan Policy Center, Washington DC, USA, Earth and Environmental Sciences Division of the Los Alamos National Laboratory, Niger Delta Renaissance with GUS/Nigeria;
- 6) receiving briefings from Harold Sjursen on multi-prong initiatives organized at the Polytechnic Institute of New York University with strong cooperation of partner institutions and Amit Maitra on funding initiatives/prospects; and
- 7) holding roundtable discussions with and among the Project members.

Attendees received briefings from Andrea M. Bassi, and Takeshi Utsumi. Harold Sjursen, Amit Maitra, and Carl Skelton also addressed members.

#### **Andrea Bassi:**

Andrea talked about his ongoing work on an integrated tool for national energy planning customized to North America. His approach has two facets: (1) case study approach to analyzing the impact of world oil production on economic, social and environmental indicators and (2) simulations showing economic effect of implementing different policy choices. Andrea has familiarity with Input-Output techniques that could easily be integrated with his analytic methodologies. That was a point of departure for Takeshi Utsumi to highlight his approaches to quantification.

#### **Takeshi Utsumi:**

Takeshi referred to the ongoing work on several modeling techniques described under:

1. "Globally Collaborative Environmental Peace Gaming (GCEPG) Project"<<http://tinyurl.com/k2c7a>>

2. “Global Socio-Economic-Energy-Environment Development (GSEED) Project”  
<<http://tinyurl.com/6fb8bb>>
3. Niger Delta Renaissance Project with GUS/Nigeria  
<<http://tinyurl.com/nwesxt>>

The underlying thrust of these models is to help decision makers construct a globally distributed decision-support system for conflict resolution with rational analysis and critical thinking based on "facts and figures." That being the case, the Project members present at the meeting asked what kind of collaborative work would be most fruitful, given the objectives and terms of reference of Columbia University's CICR-sponsored Spring '10 Conference. Attendees saw the virtues of the preceding system and simulation modeling work and sought ways by which the modeling efforts could be interrelated, conceived, and formulated to contribute to one another.

General interdependence techniques have many limitations: they involve sweeping assumptions; they abstract from many important realities of national and international life. Yet, after all their limitations are set down, the fact remains that they provide essential ingredients for integrating various partial studies.

Of the general interdependence approaches which have been investigated, the interregional input-out approach pioneered by Wassily W. Leontief is most prominent, both in terms of accomplishment and recognition. Takeshi, Andrea, and Amit agreed that it represents a fruitful approach for depicting and investigating the underlying processes which bind together the regions of a system and all the separate facets of their economies. Its strength lies in its **detailed quantitative presentation** of an inter-industry system as it exists not only within each region but also among regions.

Although the large number of relationships to be handled in input-output models leads to the use of matrix algebra to describe the system and computers to solve the set of equations, the underlying concepts are relatively easy to grasp. In its most advanced form, it pertains to national economies, it views regions broadly, and defines nations as regions bounded by political, cultural, and similar institutional barriers and lines. According to Amit Maitra, clearly the conventions utilized in input-output models can provide the **quantitative support** to GLOSAS/USA's mega models and their developers and investigators. The utility of input-output models as a descriptive device should be immediately apparent when a fine industrial classification, such as the 187 industry classification used by the Bureau of Labor Statistics in the 1977 input-out study of the United States, is used.

Amit Maitra provided a copy of his paper, *Facilitating Adjustment to Change in Fossil Fuel Supplies: Some Available Possibilities* [1977], to Harold Sjurgen to showcase how such a model presents a comprehensive set of basic data for a regional economy in an internally consistent fashion. It helps measure important dimensions of an economy, whether they be small, but perhaps strategic sectors, or, through aggregation and consolidation of sectors, or large sectors that contribute the level of such significant magnitudes as national income and national product (e.g., Nigerian oil). Amit

underscored the importance of dovetailing **small-scale quantitative modeling effort** with GLOSAS/USA's mega model building task. The GLOSAS/USA-led **quantitative** model would help furnish a sound statistical base for: (1) studying problems of growth, which Harold Sjursen proposes to investigate through regional analysis at various levels, paying special attention to technology, and (2) programming development, which Andrea Bassi and Takeshi Utsumi have documented in their publications.

### **Harold Sjursen:**

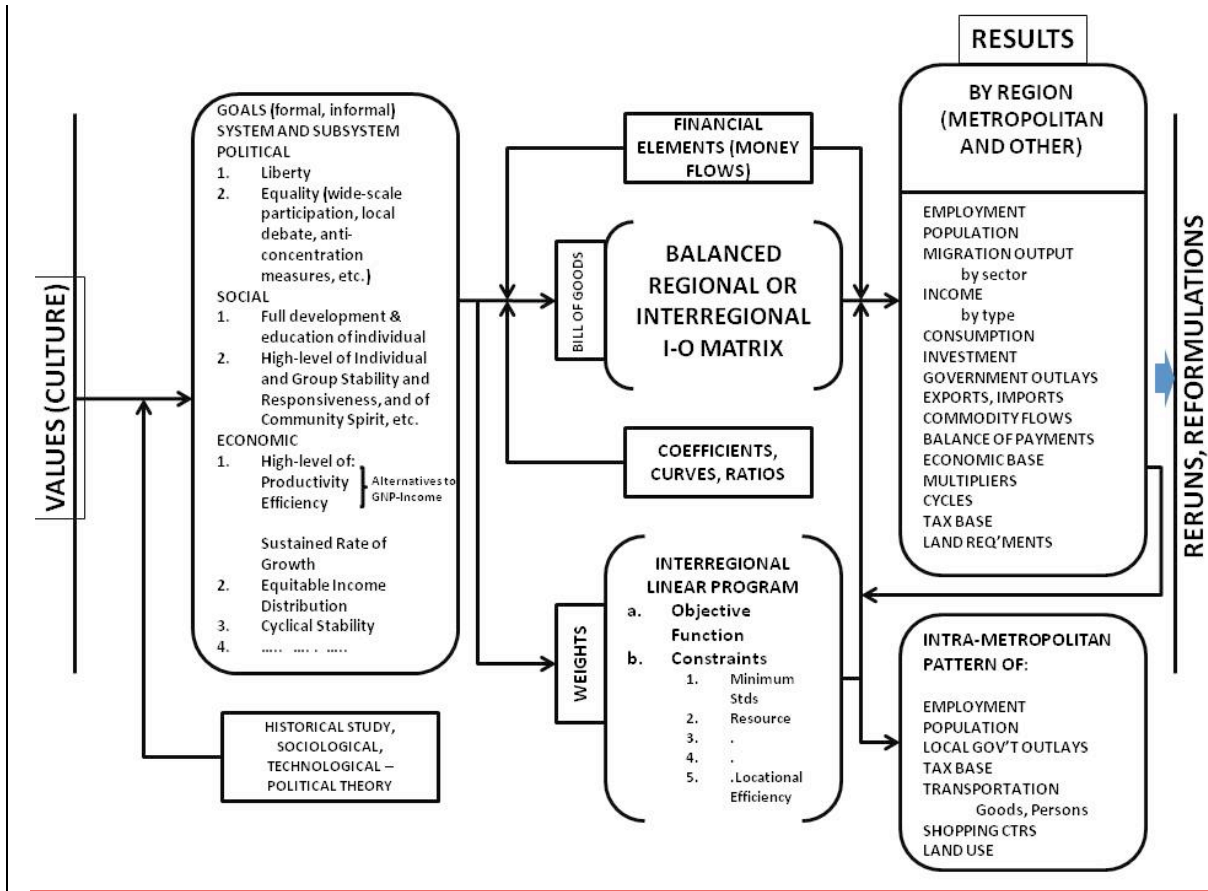
The India-China Technology Knowledge Capacity Building Collaborative Project, discussed by Harold Sjursen, is a multi-prong initiative, which is organized at the Polytechnic Institute of New York University with the strong cooperation of partner institutions. The Initiative was inspired by and is parallel to an activity currently underway under the direction of the India-China Institute of the New School for Social Research. In that Initiative, the concept of regional understanding is being explored on various levels, but with limited attention to technology. The Polytechnic Institute is a key component in NYU's major program in international education, leading the effort in technology education. In the proposed initiative, technology is the central focus, to be addressed through a portfolio of semi-autonomous projects on the levels of research, education, and entrepreneurial enterprise. In its initial stages, the initiative will work in the SW China - NE India Region (including Myanmar, Bangladesh and Viet Nam), but the research especially will look at the situation in China and India. A key issue to be investigated on all levels is to what extent global generalizations are justified and to what degree do regions exhibit unique features not replicated elsewhere.

Because of the activity and investment, especially on the part of China, in Africa and South America, it is impossible to understand the many dynamics of technological innovation in the regions of China and India without some understanding of the situation at the other end of the chains. For this reason, Harold Sjursen, Takeshi Utsumi, and others think we should invite partners from Africa (Algeria and Nigeria), China, India, Bangladesh, and South America (Brazil) to participate in the initiative.

Additionally, Amit Maitra argued that we should advocate the incorporation of a fused framework for full inclusion of all types of modeling each of our members is currently involved in.

### **Amit Maitra:**

In each of the briefings, we dealt with a group of tools or techniques which relates to a particular subsystem of the system of regions, or to the structure of a region as a system, or to both. But in order to play a positive and constructive role in the Columbia University's CICR sponsored Conference, we need to produce a comprehensive synthesis of all modeling tools. Amit talked about the possibility of identifying the ways and procedures by which various systems and subsystems may be interrelated. For the benefit of those members who were not privy to our discussion, this diagram shows the main channels along which synthesis of diverse techniques can be achieved. See below.



The benefits of a fused framework are many:

- a. All parties can plug in their individual modeling efforts.
- b. Each modeling effort remains autonomous, small, and manageable.
- c. We may also continue to observe diverse phases of the spatial organization of society in a manner that points up the possibilities of their integration conceptually and, where possible, quantitatively and operationally.

Finally, because of the participation of many institutions, funding may be easier to secure and share, not to mention potential buy-in of all concerned.

### Action Plan

The immediate task is to:

- a. **Regroup**
- b. **Decide on the concept of the fused framework**
- c. **Propose the framework as part of our contribution to the success of the Columbia University's CICR sponsored Spring '10 Conference**

In our two-page proposal, we should also underscore that what GLOSAS/GUS partners offer is the **quantitative dynamic schema** for understanding the impact of technological innovations and the processes for growth and change.

In our next meeting, we should review the proposal with Harold Sjurgen to determine if this fused framework appeals to the New York University in the context of their direction, budget, and deliverables. Does this framework serve the purpose of instigating the school to share its expertise, funding resources, data, and research results with all of the GLOSAS/GUS, Millennium Institute, and Columbia University CICR participants in the initiative?

We have made a good beginning. If we succeed in partnering with the Columbia University's CICR Spring '10 Conference, we will be able to probe the regional and interregional structure and function at its core, uncovering and emphasizing basic interactions of political, social, technological, and economic forces that are often not clearly articulated or understood.

### **Task Assignments:**

- 1. Amit Maitra to prepare a coordination draft of the 2+ page proposal for review by GLOSAS/GUS members before submission to the Columbia University's CICR Spring '10 Conference. Timeline for submission is fast approaching. The draft should be ready for review in one week.**
- 2. Harold Sjurgen to investigate collaboration opportunity between the Polytechnic Institute of New York University and GLOSAS/GUS on the proposed Columbia University's CICR Spring '10 Conference, including possible partial funding from the School and others.**
- 3. Amit Maitra to seek possible matching fund from other foundations.**
- 4. Takeshi Utsumi and Carl Skelton to expand networking opportunities with potential partners and donors.**