REFUGEES AND SOCIAL JUSTICE: THE GEWS (GLOBAL EARLY WARNING SYSTEM) MODEL

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Summary

The FUGI global model can be used as the GEWS (global early warning system) model for refugees and displaced persons (or forced migration), which might be seen as serious global issues in the twenty-first century. It can provide information on the possibilities of movement of displaced persons because of (1) destruction of the environment, (2) failures in development, (3) lack of peace and security, (4) violations of human rights. The GEWS model provides the major risk indicators at the country level for monitoring early warning for refugees and social justice around the world through the Internet pages <http://suissgate.t.soka.ac.jp> and <http://fugimodel.t.soka.ac.jp>.

1. Introduction: FUGI-GEWS System Structure

During the period 1984-1985, United Nations University and Soka University made a joint research effort on refugees in Asia. In this context, the UN Independent Committee on Human Rights asked us whether it would be possible to design the Global Early Warning System for Refugees or Displaced Persons.

Therefore, the author decided to design the Global Early Warning System for Refugees or Displaced Persons (GEWS) on the basis of the FUGI Global Model. Since the earlier FUGI model was designed as an economic model, the scope was enlarged to include environment, peace and security, and human rights subsystems to analyze the social justice and refugee issues. The FUGI-GEWS model was first applied to selected Asian countries in 1985 and predicted that one of the most risky countries for potential refugees would be The Philippines under Marcos.

The FUGI global model can be used as the GEWS (global early warning system) model for refugees and displaced persons (or forced migration), which might be seen as serious global issues in the twenty-first century. It can provide information on the possibilities of the appearance of displaced persons derived from (1) destruction of environment, (2)

failures in development, (3) lack of peace and security, (4) violation of human rights. The GEWS model provides the major risk indicators at the country level for monitoring early warning for refugees and social justice around the world at the Internet home pages <http://suissgate.t.soka.ac.jp> and <http://fugimodel.t.soka.ac.jp>.

Let us first refer to the FUGI-GEWS system structure, keeping in mind that no model can be built unless we make clear just what systems create the illegal migration. The systems structures that are responsible for refugees being generated will contain subsystems having to do with such matters as environment, economic development, peace and security, and human rights.

For the purpose of illustrating GEWS systems, we often prefer a type of computer-produced graphics called flow diagrams.

Since the most important point here is to make clear those sorts of systems that generate refugees and also the more specific structures of those systems, we decided to apply something analogous to the pattern recognition carried out by the right side of the brain as a first approximation in dealing with directly perceived images of reality. This is the part of our model where the right hemisphere of the brain plays a central role. Although the model as a whole gives greatest prominence to the left brain (and in fact no computer model can work without left brain functions), the recognition of patterns of reality is a field of activity for the right brain.

First of all, there is a risk of occurrence of ecological refugees corresponding to destruction in environment. In the case of Africa, for example, there are continuing large increases in population. Even though there may be various reasons for the population increase, the graphic presentation indicates this growth in a simplified way. One of the more complex parts of our system has to do with the ways in which population increases, but to use words to write it all out in detail might make it much more difficult to understand than just looking at the graphic presentation. Although we are dealing with a global model, the computer program is designed to draw graphic images for models of individual countries. The FUGI global model 9.0 (see *The Fugi Global Model 9.0 M200*) consists of 200 countries and regions, linked through international trade and in many other ways, including inflows and outflows of immigrants, temporary visitors, and illegal migration. The GEWS model presents a visual image for each individual country and tries to make this image as simple as possible.

Thus, while in the case of population, for example, there are various complex issues related to why population grows or declines, these are presented in the model in a greatly simplified way. If population should increase, there will be a growing need for food. When we multiply a country's population by per capita food requirements, we get the total food required by the country. With respect to the means for increasing food supplies, various factors should be considered, including, at the most basic level, increase of the surface of arable land and a rise in agricultural productivity per land unit. What is especially problematic in many parts of Africa, from the point of view of augmenting food supplies, is the further expansion of arable surface. Attempts to expand arable land involve deforestation and give rise to the continual disappearance of

forests.

One reason this deforestation has come about has been the increasing use of energy. As human beings increased in number, the dried manure of livestock that had traditionally been used as an energy source came to be no longer adequate. More firewood becomes necessary, and so forests are cut to get it. At the same time, burnt-field agriculture is practiced as a part of the effort to increase arable land. In such ways, then, the disappearance of forests is preceding apace. The burning of forests also gives rise to problems of CO_2 emissions thought likely to result in global warming.

When forests disappear, we see what may seem to be the contradictory phenomena of drought and floods. This is because of the loss of the regulatory functions, which healthy forests exhibit. Natural disasters then tend to occur much more easily. After a drought, erosion involving the loss of topsoil occurs as a matter of course. This gives rise to desertification, and thus puts great constraints on any efforts to increase the supply of arable land.

Though it is not often written about in detail, in the case of many African countries, the better land is often used for export crops, that is to say, for plantations. Thus, that portion of the arable land allotted for the provision of domestic food supplies tends to be reduced to those areas with the worst circumstances for agriculture. In this connection, the governments of many developing countries, when unable to import plants and materials needed for development, push for specialization in certain primary products for export in the hope of gaining the foreign exchange they want so badly. As a result, soil erosion and desertification become worse, imposing severe limitations on the production of foods.

In countries where large areas of land are continually subdivided into smaller and smaller units due to population increase, at the same time there can be seen a progressive growth of concentrated land holdings as land lost through subdivision is "redeveloped" for export crops.

Such practices accelerate soil pollution, erosion, and soil impoverishment. Water pollution can also be a major problem. In developing countries, as elsewhere, when population increases, so does the volume of household wastes. Untreated wastes have had such a negative impact on coastal fishing industries that family livelihoods, which have been based on small-scale fishing enterprises, are destroyed. This is one of the factors causing the spread of urban slums in Asia.

In Africa, although problems with fisheries also exist, it is pressures on food supplies caused by the disappearance of forests that constitute the biggest problem. As a result, the imbalance between food and population is becoming more serious. In other words, as population and food needs increase, there is the dilemma of not being able to supply these needs from domestic production, so famine occurs. Famines in Africa have given rise to the large-scale appearance of "ecologically illegal migration."

Failures of Economic Development. Next we should like to discuss problems of economically displaced persons derived from failures in economic development, some

of which will be fairly easy to understand if illustrated with examples from some countries in Latin America and the Caribbean.

First, a country's need for economic growth increases as a result of increases in population and labor force. As the labor force increases, it will not do to neglect the expansion of opportunities for employment. So every country grapples with economic development as a matter of the greatest importance. Money for investment can come either from abroad or from domestic savings. In the latter case, it will more likely come from wealthy landowners and industrialists rather than from the economically hard-pressed masses of the population.

In any event, to stimulate expansion of the gross domestic product (GDP), there is first of all the factor of investments, including the necessity of investments in work force and in technology. Furthermore, it is now almost universally recognized that matters such as education and health also have an enormous impact on raising labor productivity. It is thanks to all these various factors that production which may be categorized into agricultural, manufacturing, and service sectors is made possible. As production increases come to be reflected in the form of increases in per capita income, they spur a rise in wages. As wages rise without offsetting labor productivity rises, prices also rise, thus establishing a linkage with domestic inflation.

Another limiting factor with regard to development possibilities is international trade. Exports may be primary products, manufactured products, or services, but it is characteristic of the least developing countries that a large proportion of their exports consist of primary products. Although the East Asian countries, China in particular, and the ASEAN countries have been making rapid progress with industrialization and increasing exports of manufactured goods, the LDC (least developed countries) are not. Imports are paid for with money earned from exports, and with other money received from abroad, such as inflows of capital, official development assistance (ODA), and private direct foreign investments. Imports are likely to include consumer goods, but also energy, foodstuffs, and machinery needs for economic development.

These sorts of import limitations also impose restraints on investment within the country in question. On the other hand, countries whose exports are expanding steadily and which have private direct investment coming in from abroad are able to import machinery to maintain a high tempo of development. This situation was seen notably in the Asian countries such as China and ASEAN members in the first half of the 1990s, although some ASEAN members such as Indonesia, Malaysia, The Philippines, and Thailand suffered from severe financial crisis in the late 1990s. But in Sub-Saharan Africa, the situation is becoming more and more characterized by severe impoverishment.

At the same time, due to various types of political unrest, private investments from abroad are rapidly ceasing to come into countries facing internal conflicts, and are in some cases, in fact, fleeing from those countries. Thus, such a country's foreign exchange position, i.e. its foreign exchange reserve, may rapidly fall to crisis levels. Also, there is a fleeing of capital owned by its own citizens. In such a situation, then, we can see system structure changes that characterize failures in development.

Lack of Peace and Security. The third category of refugees is derived from a lack of peace and security. Absence of peace and security reflects political antagonisms and violent confrontations, but when we look at such situations in terms of the domestic economy of a given country, they are almost always accompanied by poverty among the mass of the population, great inequalities in income distribution, and the rapid spread of urban slums. Thus, situations of political unrest typically reflect great social and economic unrest. When law and order break down, this gives rise, in many cases, to insurgencies and eventually to civil wars.

Violations of Human Rights. There is also fourth category of refugees derived from violation of human rights. The most fundamental ways in which violations of human rights give rise to displaced persons have to do with the loss or destruction of means for satisfying basic human existence needs, as happens, for example, in cases of famine. Large-scale occurrences of displaced persons may also come about because of religious or ideological oppression, racial prejudice, and other types of neglect of human rights involving loss of respect for human life or for traditional cultures.

In summary, an overall picture of displaced persons will involve a system structure that brings together the interrelated causative factors that underlie the four listed categories. The GEWS model is essentially the outcome of research and development of the FUGI global models, which we have been researching and improving day by day. Although the major core of the FUGI global model 9.0 consists of the economic development system, it also includes subsystems such as environment, peace and security, and human rights, which correspond with special relevance to the generation of refugees at the country level, informing a global viewpoint.

Thus, the current FUGI model as a whole is in good shape for practical application to monitoring early warning of *potential* refugees in any parts of the world (see Figure 1).

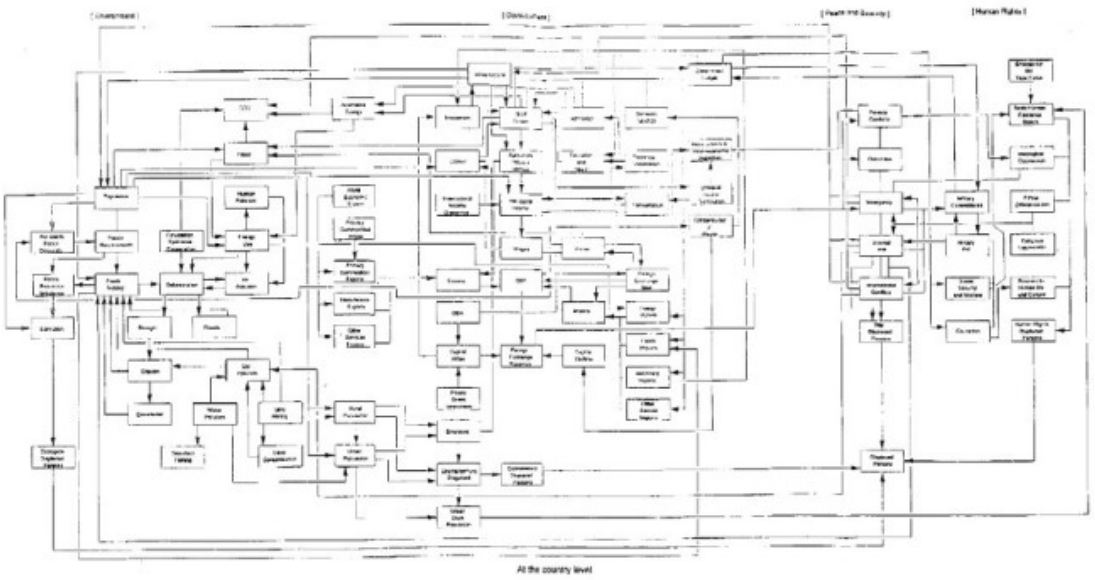

Figure 1. Flow diagram of Global Early Warning System (FUGI-GEWS)

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Biographical Sketch

Akira Onishi is Vice President of Soka University, an economist and global modeling educator. His academic background is in both economics and systems engineering. He received a Ph.D. in Economics from Keio University and a Ph.D. in Systems Engineering from Tokyo Institute of Technology. He had an opportunity to work at the United Nations ESCAP and ILO, 1966–1970. Then he has served at Soka University, Tokyo, as Dean, Department of Economics, 1976–1991; Dean, Graduate School of Economics, 1976–1991; Director, Soka University Institute for Systems Science (SUISS), 1990–present; Dean, Faculty of Engineering, 1991–1995; Dean, Graduate School of Engineering, 1995–1999; Vice President, 1989-present. He served as President of Japan Association of Simulation and Gaming, 1993–1997. He has received many academic awards: the International Biographical Roll of Honor to the Global Modeling Profession from the American Biographical Institute, US, 1989; the first Supreme Article Award from the Japanese Association of Administration and planning, 1991; The 20th Century Award for Achievement from the International Bibliographic Centre, Cambridge, England for Global Modeling, 1993; The Excellent Article Award from ECAAR, 1997; The Japan Assn. Simulation and Gaming Award, 1998; 2000 Outstanding Intellectuals of the 20th Grand from the IBC, 1999. He was selected as one of the First Five Hundred in 2000 for service to Economic Science by the IBC. He is well-known as an original designer of the **FUGI** (*Futures of Global Interdependence)* model. The United Nations Secretariat, Department of International Economic and Social Affairs, adopted this model for long-term projections and policy simulations of the world economy from 1981–1991. During the period 1985–1986, he designed the Global Early Warning Systems for Displaced Persons (GEWS) under the auspices of the United Nations Independent Committee of Human Rights. The UNCTAD Secretariat has officially adopted the FUGI model for projections of the world economy and policy scenario simulations since 2000. FUGI model 9.0 M200 as an integrated global model can provide not only global information on sustainable development but also on displaced persons or refugees who might be seen as serious global

issues in the twenty-first century.