

Conflict Early Warning and Prediction

Economic globalization is turning some poor areas into centers of prosperity and growth, but leaving others behind in abject poverty, sparking conflicts that have more to do with resources than with nationalism. In short, contemporary world affairs defy exclusively political, security-related and economic definitions.

“The New Geography of Conflict,” Michael Klare, Foreign Affairs, Volume 80 No.3, May/June 2001

Modeling information to reflect social or political change or military threat has long been a tradition in the western world through the use of political or military atlases (e.g., Janes’ Ships; Macedonia Geographic Profile of a Balkan State – CIA 1993; The World Bank Atlas 1995). In these atlases numerous parameters or attributes are portrayed spatially and provide visual emphasis not available in tables, graphs and pie charts.

Recent advances in computer science, in hardware and software have increased our ability to combine and demonstrate social, economic and biophysical parameters in a spatial context. This method is known as Geographic Information System (GIS) Technology.

However, the most important breakthrough in this field of computerized statistical landscaping, is the ability computers offer to superimpose various parameters or layers of information and compute composited sets of data for given areas. The computing ability of personal computers also permits rapid extrapolation of composited data sets in a modeling framework allowing us to view the world as it might be in the future, (predictive modeling), with respect to any number of parameters; including such things as population, G.N.P., agriculture, education, environment, rainfall, etc.

Successful modeling and compositing of social, economic, political, military and biophysical data can provide information and early warning for areas where conflicts may be building but not yet apparent. The State of the World Atlas; World Resources Institute and others in the intelligence community have attempted to create the basic information or modeling context for conflict prediction.

Further, and more important, successful conflict prediction modeling will permit managers to define and put in place conflict resolution mechanisms before conflicts spin out of control. The conflict prediction modeling process we propose would underline conflict parameter(s) most likely to create hostility between stakeholders. This approach will provide conflict resolution policy makers with a framework for understanding the conflict; identifying its cause and creating a strategic conflict resolution management plan for implementing policy change.

To create the prediction model, data would be collected for areas of interest for approximately 25 parameters or conflict vectors. The data would be spatialized for each parameter using available map bases of preferably satellite imagery of medium resolution (or better).

The data from each parameter would be weighed with respect to its importance, and the various parameters would be integrated to create crisis maps showing hot spots and levels of potential conflict. These weightings could be done by grouping or individually. One option would be to develop an interface to allow the user/group to either alter the weightings or the parameters used in the modeling.

Once set in place, the systems would be updated periodically depending on potential conflict(s). For example, if the system were created at a global level, Australia would not require updating except every 10 years. Countries like Hungary and Romania (Transylvania) might need a review and assessment every 2 years. Bulgaria, Greece and the Balkans, would require continuous monitoring and evaluation.

A global system would need to avoid the creation of very large files and should limit costs. A hierarchical approach would be used to eliminate non-conflict areas and focus on areas of potential danger. Parameters or factors will be used on the basis of their importance as primary, secondary, etc., screening tools.

A hierarchical approach to model and/or predict conflicts should consider four or five levels of assessment.

Group 1 – Primary Screening Parameters

1. Climate
2. Demographic change (population growth; rural v/s urban)
3. Accessibility to basic foodstuffs
4. Political change—party/government type
5. Historical information (maps showing location of boundaries, ethnic groups, religious, races, languages, etc., through time).
6. Ethnicity (race, class)
7. Religion
8. Number of Stakeholders per unit area and Stakeholder Resources Claims

Group 2 – Secondary Screening Parameters

1. Women's rights
2. Immigration/emigration
3. Land and other resource ownership
4. Poverty (as measured by life style, G.N.P., unemployment, etc.)
5. Education
6. Income Gaps—Class Differentiation
7. Language Differences
8. Health related factors: pandemics-HIV/AIDS, malaria and epidemics-typhoid, meningitis.

Group 3 – Tertiary Screening Parameters

1. Surrounding states (economic, political, population or other pressure from other contiguous nation(s)).
2. Natural resources (natural hazards).
3. Environmental status/stresses, (urban overcrowding)
4. Economic growth or stagnation.

Group 4 – Quaternary Screening Parameters

1. Political Extremism (left or right), loss of rights.
2. Military conscription (size of military).
3. National debt/decrease or change in living standards.
4. Military expenditures.

Additional Parameters include, but are not limited to the following:

- urban upheaval or rural migration to cities
- nuclear power capacity
- level of democratization
- production, availability and use of drugs
- separatist conflict(s)
- natural hazards potential
- famine potential
- martial law

This system will require the creation of a “global” enterprise data baseline and specially developed user-friendly, web-enabled GIS application to allow conflict managers in national and international development, diplomatic and defense establishments to update and monitor the areas of their interest.

We propose to create a model to measure the changing dynamics of an area, region, or country and to measure its potential for “spinning” out of control. In a sense, we will be measuring the non-sustainability of an area or nation and reflecting on the interplay of a wide range of development issues. This approach is the obverse of the World Bank’s publication “World Development Indicators.” Such a view, albeit negative, will empower policy makers and crisis managers to make better decisions.

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