Towards the Development of an Early Warning/Response Network

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This is an abridgement of a proposal prepared by Howard Adelman and Susanne Schmeidl of the Centre for Refugee Studies, with the contribution of Michael Lund of Creative Associates International. This article is based on the revised version dated 7 June 1996, incorporating changes in response to comments received on the initial draft proposal. A complete version, including the detailed budget and appendices, is available from the CRS upon request.

Abstract

This article outlines a proposal put forth by the Prevention/Early Warning Unit at the Centre for Refugee Studies, York University. The article describes the problems with early warning and how an early warning network (EWNET) can address these existing difficulties. This EWNET is described as an academic-NGO-policy consortium that over a period of a few years will become self-sufficient through the involvement of business. Utilizing the Internet, EWNET will collect information from all over the world, analyze and disseminate such information. The link to policy makers and the importance of properly communicating alerts are discussed. While a central management team oversees EWNET, there are several units working on administration, sales and research. Furthermore, the research unit is broken down into indicator, communication, response and area study research; the latter being linked to twenty crises area nodes. This structure assures that EWNET will comprise a broad resource network as well as the links necessary for sending uniform early warning signals.

Résumé

Rédigé sous l'égide de l'Unité pour la détection et la prévention des conflits du Centre d'Études sur les Réfugies de l'Université York, cet article fait état des principaux problèmes existant en matière d'alerte préventive et propose la création d'un consortium réunissant des experts oeuvrant dans le domine de la recherche et au sein d'organisations non-gouvernementales afin de faire face à ces difficultés. Établi sur Internet, le Réseau EWNET, destiné à être autonome sur le plan financier d'ici quelques années grâce à l'apport de capitaux privés, doit rassembler, analyser et disséminer des informations en provenance de toutes les parties du monde en matière d'alerte rapide et de prévention des conflits. Structuré autour d'une équipe principale de supervision, EWNET est constitué de plusieurs sous-unités fonctionnelles travaillant sur les aspects de l'administration, du financement et de la recherche d'indicateurs, la communication de l'information, la formulation de réponses aux problèmes rencontré et l'étude de situations régionales dans une vingtaine de régions conflictuelles. Cette structure vise à assurer au réseau une capacité d'action globale tout en lui garantissant la cohésion nécessaire à l'envoi effectif de signaux d'alerte. Les problèmes rencontrés dans la réalisation de cette tâche ainsi que la question des liens à établir et du travail de sensibilisation à effectuer auprès des décideurs politiques sont aussi évoqués.

The G-7 meeting of leaders in Halifax, Nova Scotia in June of 1995 called for exploring the means to improve the analysis and utilization of disaster- and conflict-related early warning information. It was noted that the issue was not one of collecting more information, but rather the enhancement of analytical capacity and the availability that analysis to decision makers. This G-7 meeting merely echoed the many calls both within and outside the UN calling for the creation of a workable early warning system to assist decision makers. However, there is a difference between providing widespread support for an early warning system rhetorically and actually implementing one.

Early warning is defined as the communication of information on a crisis area, analysis of that information, and the development of potential strategic responses to the crisis in a timely manner. Early warning differs from intelligence systems in at least two respects. First, early warning is not concerned with a direct threat to the gatherer or analyser of the information or those contemplating a response. Rather, it is concerned with the protection of, or the provision of emergency aid to, a population within a territory in which there is either an inability or an unwillingness by the state to provide protection over that territory because the state itself, or its agents, are the victimizers, or because of the breakdown of the state itself. Inherently, early warning is motivated by universal humanitarian rather than national interests and is focused on issues concerned with interethnic violence, gross human rights violations or genocide. Second, early warning information and analysis tends to be transparent rather than secretive in nature, unlike intelligence analysis.

We propose the development of a comprehensive academic-NGO policy consortium to create a workable, effective, economic and cost-recoverable early warning system to deal with humanitarian emergencies, complex emergencies and conflict areas. This proposal outlines initial steps to be taken towards the development of a

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comprehensive early warning network or EWNET that will include proposed modes of communication as well as responses appropriate both to the analysis of a situation and the capacities of various international players. In addition to providing a link between researchers engaged in early warning (both quantitative and qualitative) and in-depth information and analysis within governmental and nongovernmental agencies, a feedback system will be created among these with other scholars engaged in indicator analysis, theoretical modelling, case study research and communication research studies on appropriate responses.

Summary Description of the EWNET

The EWNET will utilize the Internet to develop one central coordinating unit for the EWNET and twenty regional crisis area nodes (CANs). Each CAN would have a coordinating team which would be located in a local institution, a counter research team with great expertise in that crisis area located outside the CAN area, and a state with commitment to and concern for that specific crisis area. The members of the CANs would be located anywhere (locally and abroad). The EWNET itself would allow researchers in crisis areas, field workers working with Nongovernmental Organizations (NGOs) and International Nongovernmental Organizations (INGOs), and policy advisers dealing with that crisis to share information. A wider list would allow others to access that information, while a limited number of researchers would be given the responsibility of analysing the information. Each CAN early warning unit would be managed by a small team. The CAN would be linked to both the special research team on the area, and the central coordinating unit to enable all three units to interact and also enable the CAN to receive guidance on formats, key indicators, modes of communicating results, and a tool bag of potential responses. There would also be links of the CANs, the special research units, the central coordinating unit with partners who assume responsibility for political and public alerts.

The envisioned results would be based on the development of interactions on a more continuing and denser foundation. Accomplishing this would require, in part, the creation of a directory of researchers and analysts who work in each crisis area, as well as the creation of a directory of researchers who work on the modes of translating early warning signals into appropriate responses, and make it available to the policymakers, NGO and INGO personnel and other academic researchers. The foundation would also include the development of a policy network as an integral part of the information/analytic network to enable policy parameters and issues to be fed into the area early warning net. In return, this would enable the feedback of analysis and the development of scenario outlines and possible strategic alternatives to be available to decisionmakers who are active participants of the net. This policy network would create a partnership of organizations that can translate these evaluations into alerts and link general theoretical and empirical studies with comparative and area-specific case studies so that the information and analysis of all types form a feedback loop. Finally, this process would connect response and communication research as integral elements of early warning analysis.

EWNET would attempt to achieve these goals and outputs in accordance with a number of criteria. These would include the introduction of principles of coherence and comprehensiveness into the analysis and the creation of response scenarios through the development of an indicator code for evaluating the type and extremity of the crisis to provide norms for the classification of information and the ranking of early warning dangers, avoiding either U.S. or UN centredness while being compatible with initiatives in both. EWNET would balance the need for transparency with the need to develop trust and reliability and include business linkages as a method of providing self-financing to an early warning system.

From Early Warning to Response

The *raison d'être* of early warning of human-made crises that result in extensive human suffering is the desire to be better prepared to alleviate such crises when they occur, or, better yet, to prevent them from happening in the first place. Doing the latter requires a knowledge of the range of means that can address various sources of a crisis such as ethnic conflicts, gross human rights repression, civil wars, and genocide, and which means are likely to be most effective in given settings. It also requires connecting that knowledge to functioning organizational entities where analysts can assess the applicability of alternative response options to specific situations, and decisionmakers can wield their authority to activate preventive measures.

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This issue of response has cast a number of doubts upon the utility and importance of EW. The two major ones claim that EW is useless and/or will never function due to poor communication channels between the "warners" on the one hand and the "decisionmakers" on the other, and note the lack of political will on the part of decisionmakers. The first criticism is the fairly self-evident argument that even though effective mechanisms for connecting information, analyses, and appropriate responses are beneficial, the fundamental problem resides in the unwillingness among states to act

on the warnings proffered. Thus, although effective mechanisms for connecting information, analyses, and appropriate responses are valuable, the fundamental and essential missing ingredient is said to be political will. The first criticism argues that even if early warning is important, the most critical issue is not information or even analysis, but the failure to communicate that information and analysis to key decision makers (Bush 1995), a problem that has plagued intelligence analysis in the past (Lebow and Stein 1994).

As mentioned above, we are in agreement that the issue of response—who responds and how—is the most critical, followed by the importance of communicating any analysis to decision makers. Whereas considerable work has been done in identifying early warning signs of various incipient crises, much less knowledge exists so far about what options are effective in responding to them preventively under different conditions. Thus, the policy makers, being asked today to allocate scarce resources away from current crisis alleviation and routine programming to preventive capacity-building, need more confidence that there is a body of accumulated knowledge about proven preventive methods that they can take off the shelf to at least guide them in dealing with specific trouble spots. There is also little experience regarding the optimal implementing mechanisms for applying those options. Consequently, EWNET will be designed to access what knowledge does exist on these questions and to sponsor new analysis to expand the current knowledge base for preventive diplomacy. No early warning system can resolve the central issues of communication and action. Nevertheless, a working and effective early warning system can go a long way in alleviating many of the problems associated with failures in communication and response.[1]

Proper early warning analysis improves response. We "explicitly emphasize that the design and management of early warning systems should be intimately connected with the task of determining responses to warning. This emphasis complements the view that an improved capacity to know about and correctly interpret events early will improve the quality of responses that are brought eventually to bear" (George and Hoff 1996). An effective early warning system devises appropriate responses. Without an adequate early warning system that provides good analysis, proposed responses could be unrealistic due to the lack of any detailed understanding of the issue. As a result, such responses bring humanitarian interventions of any kind into disrepute and undermine all international actions except those based on narrow nation-state interests. Further, any response must be monitored to allow for flexibility and alteration in the face of changing circumstances. The very foundations of an early warning system are those that can be used to monitor and calibrate responses.

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An effective early warning system can help clarify obscure normative foundations for responses, such as the large obscure area said to exist between traditional UN peacekeeping under Chapter VI and enforcement action under Chapter VII (Urquart 1995, 3). We further agree with Sekerez (1996) that, "The UN needs to establish an early-warning system which would require intelligence and planning capacities and which would alert the Security Council for appropriate action and similarly, try to avert it from taking wrong steps." Finally, early warning is critical to the effectiveness of the response itself for it can facilitate compromise and the move towards peace between the parties to the conflict since, "it is only when actors are ill-informed about each other's capabilities or unable to anticipate each other's beliefs that secession or outside intervention may occur" (Cetiyan 1996).

Proper early warning analysis also improves communication. We argue that quality analysis is essential for effective communication though not in itself sufficient. Without a quality early warning system as the fundamental building block of an international system, not only will any communications lack content, beyond generally pointing out that a crisis exists, but it will be very difficult to derive appropriate and effective responses.

More specifically, developing a preventive capacity to respond appropriately to early warning signs in particular areas requires four kinds of analyses:

- generic knowledge of the advantages and disadvantages of a range of individual policy tools useful for prevention;
- policy-relevant lessons from retrospective studies of actual recent instances when crises and conflicts have emerged, and preventive responses have been launched (usually involving several policy tools) that either succeeded in avoiding escalation or failed;
- country or region-specific analyses of a prospective nature that seek to anticipate or "test" the applicability of particular measures and multi-tool strategies to specific settings;
- organizational assessments of the comparative capacities of different decision making and implementation mechanisms in undertaking the various tasks of early warning and preventive responses.

Addressing the Problems of an Early Warning Network

An effective early warning network must address a variety of issues: responsibility; transparency versus secrecy; the synergy of quantitative and

qualitative research; the relationship with other existing early warning efforts; and corporate involvement. The proposed network must be able to respond to the challenges raised by each of these issues if it is to be successful. We will address each in turn.

In early warning, in contrast to self-interested intelligence, the benefits are spread very widely and constitute a net gain for the world rather than for any particular party. However, as a result, there are two major difficulties concerning responsibility. Where should the responsibility for gathering the information, undertaking the analysis, and developing appropriate responses be located? Who should assume responsibility for organizing and coordinating an appropriate response? Although, in theory, the answer to the first would seem obvious—vesting the responsibility solely in the UN—in practice this solution is not functional for a number of reasons. These include the current financial difficulties within the UN; the limitation of human resources within the UN (including the way employees are hired and slotted), and, as a consequence of the first two points, the unwillingness to assign the appropriate resources to build up such a capacity. Within the UN, there is the tendency to merge operational with intelligence responsibilities, already hampered by the lack of an adequate analytic intelligence capacity. As subsidiarity emerges as a guiding principle within the UN, regional capacities are built up where both the knowledge and primary interests in responding already exist. Finally, there has been a marked unwillingness of members of the UN to authorize a full scale early warning intelligence activity lest it be used against some of the members themselves. Because of the combination of these factors, the UN is not a viable institution to assume responsibility for gathering and assessing the information required by an early warning network.

The second difficulty related to responsibility, that of response, is inherent to early warning and the issues which it addresses. Precisely because the threat is not one to the existence, or even immediate wellbeing, of a member or set of members of the international community, most importantly the powerful members, the responses to emergencies are varied, complex, and difficult. Moreover, even if it was agreed that something needed doing, it is not equally obvious what should be done and certainly not who should do it.

The basic idea of an early warning system leans towards absolute transparency which contrasts with the need for traditional secrecy or, more accurately, confidentiality concerning some information or the sources of some information.

The proposed Early Warning Network is not designed to correct either of these two problems. However, we do provide a way around the first one by making the UN itself, and other international organizations, partners in a separate entity (EWNET) focusing on early warning. In addition, we structured EWNET in a way to begin dealing with the second issue by proposing that a given state be appointed as the leader for focusing its early warning efforts on a particular crisis area and providing the leadership for responding to a crisis where the state has existing intellectual, NGO, and policy making resources as well as a strong humanitarian interest in resolving the crisis.

Transparency

The issue of transparency is a key problem for early warning: how open, and widely, can and should information (and the source of such information) be shared? The basic idea of an early warning system leans towards absolute transparency which contrasts with the need for traditional secrecy or, more accurately, confidentiality concerning some information or the sources of some information. Guilmette (1996) is undoubtedly correct in his analogy to the flying buttress in suggesting that "[t]he emergence of large windows and transparency corresponds to moving away from the middle-age secrecy era" in favour of lighter but fragile walls, requiring a fundamental rethinking of basic architecture. This is a problem that occurs at a number of levels.

Some argue that what is most important about early warning is its total transparency, indeed its high visibility, precisely to stimulate the political will that is not naturally in place as in the case of direct threats to state interests. Thus, "[p]rocedures should be established and organizations created for the public release of selected intelligence information" (Macartney 1996). However, though early warning is far more oriented to transparency than secrecy, the basic architecture of an early warning system must provide some limitations on the input of materials, more restricted access and correspondence for those doing the analysis, and some severe restrictions on very limited areas where confidentiality is critical. Flying buttresses, like electronic communications, may make a new institutional architecture possible, and indeed even desirable, and may require much greater transparency than ever before; but those new institutions do not overcome the need for private spaces and for restricted access to allow trust to develop (some of these issues are addressed in more depth later on under technological issues).

A major hurdle to an early warning network concerns the relationship between different methodologies in the collection of information for early warning purposes. In the past there has been a gap between academics involved in quantitative, indicator research to derive general categories for anticipating events, and those engaged in specific, qualitative case studies. In many cases there has even been mutual criticism of each other's work for the utility of early warning. More re-

cently, however, under the auspices of International Alert, particularly under the leadership of Hayward Alker, Kumar Rupesinghe, and Ted Robert Gurr, specialists in indicator research are applying their immense combined talents to undertake a series of restricted comparative case studies along the model proposed by Alexander George of Stanford University.

In the proposed Early Warning Network, we intend to integrate and institutionalize these links between general theory, case studies, and indicator research, and further connect such analysis to those who have undertaken research on tool kits of appropriate responses (e.g., Michael Lund) and those who have worked on the problem of communicating the results of analyses to decision makers in an effective manner. When providing links between indicator research and in-depth case studies, we combine the best of both worlds.

Case studies, even when comparative, while able to provide a rich and in-depth view of one particular crisis and/or country, have the basic problem of generalizability; it is hard to generalize from one (or several) case(s) onto the larger "population." Thus, we may know what caused genocide and mass exodus in Rwanda, but we are unable to transfer such findings to another case. Yet it is hard to neglect the importance of the ability of case studies to focus on the uniqueness of each crisis, which is very important when formulating responses. Something that might have worked in Rwanda may not work in Burundi. Thus, we need to seek out specialists on Burundi to aid us in pinpointing the unique solutions for Burundi before engaging in blanket reactions. In-depth case studies have the advantage of contextual sensitivity that large scale indicator analyses do not. Since case studies do not need to cover a breadth of countries, their measures can be much more sensitive and case specific.[2]

Thus, it becomes very clear why the linkage between in-depth case study and indicator research can be extremely powerful for the purpose of early warning. Each methodology can complement the drawbacks of the other and work jointly toward the finding of solutions to an existing crisis. Indicator research can furnish the necessary comparative breadth needed for understanding similar structural components of crises, while case studies can "fill in the blanks" with information that is case specific. In brief, case studies lack the breadth, yet have the necessary depth to understand unique situations; quantitative analysis has breadth, yet lacks the necessary depth to provide a complete picture. Thus, there is room for a very functional division of labour and complementarity.

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In light of the above, in a network linking diverse researchers together, researchers can exchange indicators and collaborate in their research in order to improve their models. Case study research can be used to supplement the knowledge from quantitative analysis enabling area experts to evaluate the information provided to them from quantitative models and case studies in order to tease out overall patterns and the proneness of a certain country to humanitarian disaster. Researchers working on responses can ultimately rely on multiple analyses when formulating policy suggestions and case scenarios.

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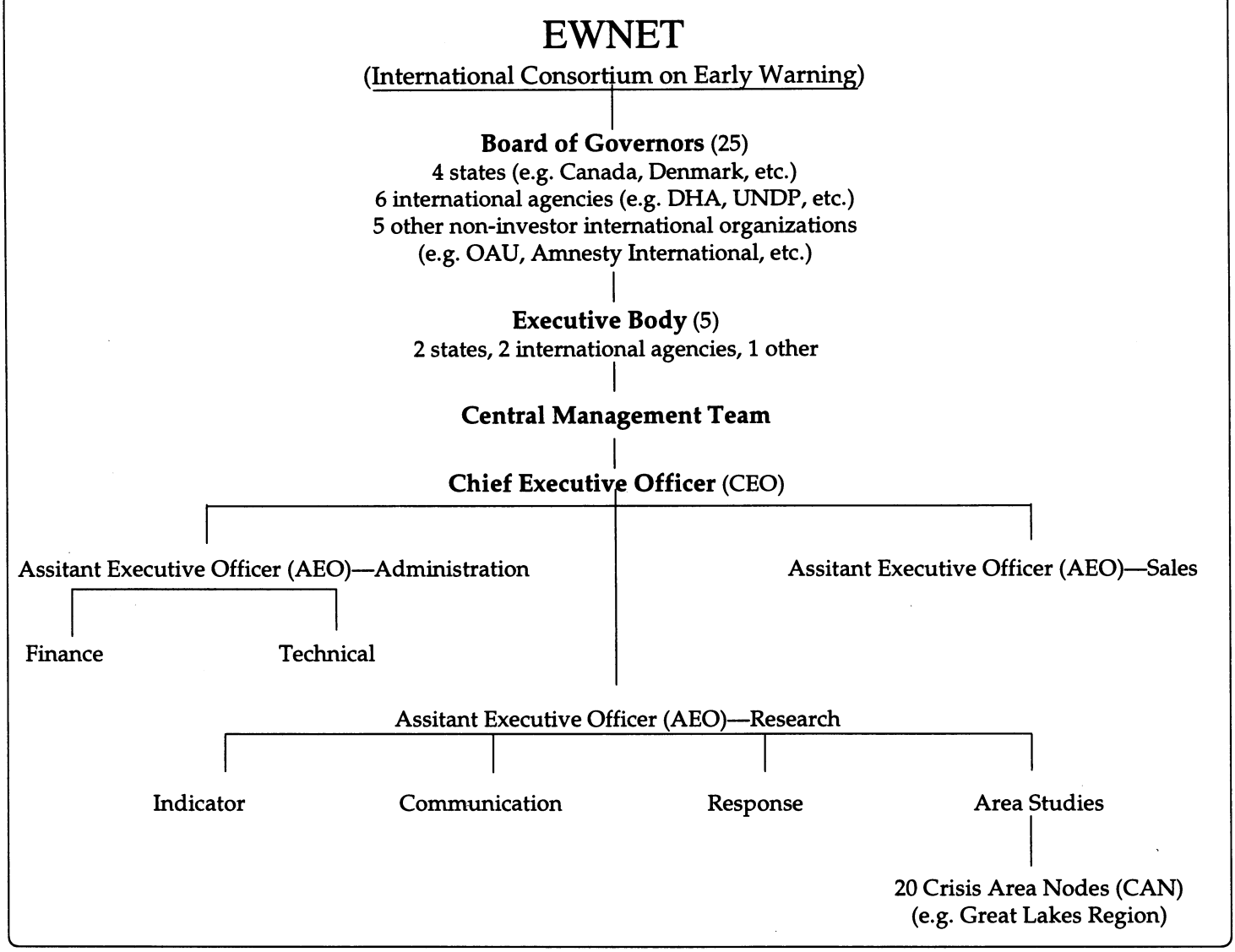
Another important issue is that a new early warning network cannot ignore the efforts already in existence. In recent years, several early warning innovations have been initiated by institutions that are much freer than the UN or governments in making information and analysis visible. In addition to the traditional watch (e.g., Africa Watch), human rights (e.g., Amnesty International), and refugee organizations (e.g., U.S. Committee for Refugees), there are specialized organizations such as International Alert in London, the Center for Preventive Action at the Council of Foreign Relations in New York, and the Carnegie Notables Group in Washington which attempt to combine experts with notables who can take care of the communication aspects of alerts. The main problem with these approaches, however, is the localized and fragmented nature of such innovations. The Early Warning Network proposed here attempts to overcome the piecemeal approach by providing the potential for knitting all these efforts together in an academic-NGO-policy consortium.

Even here, institutional innovations have been adopted to confront the limitations of state agencies while taking advantage of their strengths as well as the greater freedom of NGOs. The rather open Burundi Policy Forum and the more restricted Burundi Security Forum were instituted to connect intelligence from states, academics, and NGOs specializing in human rights monitoring, refugee advocacy, conflict resolution, and emergency relief, to share information and devise appropriate responses, from the extreme of deploying stand-by forces to more modest efforts geared to impeding arms flows, or freezing extremist leaders' foreign bank accounts and abilities to travel. Such efforts need to be extended and incorporated into an early

FIG. 1: EWNET PROPOSED OPERATING STRUCTURE



warning network that goes beyond one particular crisis area.

Furthermore, the United States government already has a global early warning capacity which is increasingly moving towards transparency. For example, the U.S. National Security Council has provided satellite pictures of refugee flows to assist humanitarian agencies. U.S. Ambassador Albright released satellite photos of movements of prisoners and burial sites to help document Serb atrocities in the Bosnian war. These, however, were not early warnings but very late warnings and after the fact analyses. The US National Intelligence Council has tried to fill the early warning gap by providing national intelligence estimates of impending global humanitarian emergencies associated with internal conflicts, dubbed 'complex emergencies,' for 1994 through 1996.

Locating any early warning network solely within the United States has inherent limitations. There is a clear tendency to target for conflicts analysis that can be avoided, and to focus on responses that might resolve such conflicts without a major expenditure of human, financial, and political resources. To be more specific, the major developments of EW in the United States have been held hostage to Presidential Decision Directive (PDD) 25 and the declared unwillingness of the United States to respond except where there is little risk and expenditure, financially or politically. Thus, the U.S. early warning system is not geared to assisting those countries committed to prudent internationalism or to challenge the current United States reluctance in this area.

Last, but not least, another drawback of existing early warning innovations is the absence of any business linkages. In a controversial article, a former Director of Intelligence in the United States, Stansfield Turner (1991), argued for the use of intelligence resources in direct support of private corporations. Russia has been the most advanced in using these sug-

gestions to redeploy its intelligence service for these purposes, unfortunately sometimes for allegedly corrupt practices. We propose, however, to take advantage of these suggestions for much more benevolent purposes by providing a system for making early warning a self-financing enterprise while providing information and analysis needed by businesses to assist them in decision making.

Operation of the Early Warning Network (EWNET)

The consortium will be controlled by the founding partners, including states, international agencies, and nonprofit organizations. It is critical that the design and management of an early warning system be intimately connected to the policy actors who carry the responsibility for determining responses to any EW. We envision a corporate partnership of state and international agency investors. The consortium should be composed of approximately fourteen states, six international agencies, and five NGOs and regional organizations. While twenty of the partners would be required to make a full investment, we expect to include five additional participants (such as the OAU and Amnesty International) which will only be required to make nominal investments. Further, it is hoped that money generated by EWNET can be used to fund research on the large data collections and analyses of these organizations.

A central organization would be used for selecting research and analysis teams, defining their roles and responsibilities, and developing normative and technical protocols for operations and research. The central body will also be responsible for managing funds and selecting the locales for the regional crisis networks responsible for the basic information collection and exchanges, analyses, and the development of strategic alternatives. The consortium will also be responsible for setting up the protocols for the regional early warning systems, selecting sites, and setting up the management team to develop the system as a self-funding organization through the sale of the analyses developed. Finally, the consortium will be responsible for negotiating a contract with a sales organization that will sell subscriptions to the information network and analysis developed in order to make the operation self-financing (see Operational Chart).

The Central Management Team will consist of a small compact group with nine employees. In effect, the sales force and the actual research will be contracted out. The communication of the public alert would be left to policy makers and agencies. A Chief Executive Officer (CEO) would oversee three Assistant Executive Officers (AEOs): Administration, Sales, and Research. Coordination of the administration would be the responsibility of an AEO who would oversee both the financial and technical administration of the consortium. The technical protocols will provide increased access from those able to access information, able to input information, those participating in the analysis, and those managing the Crisis Area Node (CAN).

Each AEO would oversee the particular operations for that sector of the network. The AEO Sales would oversee the contract with the sales organization responsible for obtaining contracts with states, international organizations, corporations, etc., as well as ensuring that they have adequate access to the information and the analyses produced. The AEO Research would oversee the contracts with the various bodies (CANs) undertaking research in specific crisis areas as well as develop separate research teams in three other areas: theoretical modelling based on the comparisons of the various cases to further develop key indicators, communication research, and response research.

The Communication research area team would focus on informing the early warning teams of intelligence gathering, reducing obstacles to absorbing information and analysis, reinforcing possibilities for consultations, initiating dialogues, and forging connections with institutions engaged in public alerts. The AEO Response research team would have the difficult task of undertaking research on bridging the age-old gap between policy research analyses and timely policy initiatives.

Each Crisis Central team will consist of five to six operational members and a backup analytic capability of twenty to forty scholars and policy makers with area expertise. The information base will be provided by a larger pool of 200–400 personnel with access to information and specialized knowledge of critical aspects of the region.

The efficiency of this system depends on the involvement of policy makers at all levels, the development of high profile alert units separate from the consortium, and the retention of control in the hands of a group of like-minded "internationalists" with a commitment to minimal standards of international behaviour.

Due to the nature of the [EW] network—a central point for correspondence from predominantly developing countries—it will be necessary to ensure that all correspondents have adequate access to the Internet.

Technological Issues

EWNET is a communications system and information repository that would comprise a web site and a listserv on the Internet. The web site would have three purposes: 1) to provide information about the Early Warning Project to other researchers, subject matter experts, students and interested parties in general; 2) to provide a central repository for information posted by EWNET correspondents from remote locations (through a password pro-

tected mechanism); and 3) to afford researchers and analysts a centralized source of information for analysis (password protected).

EWNET will allow authorized correspondents to post their dispatches to a secure area on the server that can be accessed only by authorized analysts. There will be a listserv to be used as a general tool for correspondence between EWNET members and users. The listserv will automatically forward all messages posted to it to all subscribers. All those affiliated with EWNET would have email addresses for private correspondence. The entire system, including the web site and listserv would be key word searchable.

Because the system will use the Internet as its medium, it will be available to those with Internet access anywhere in the world. Due to the nature of the network—a central point for correspondence from predominantly developing countries—it will be necessary to ensure that all correspondents have adequate access to the Internet. (If the correspondents are affiliated with universities in their respective countries, this should be less of a problem.) Because the network will be relied upon by users with varying levels of Internet access, it will be necessary to ensure its functionality over slower speed lines and with various World Wide Web browsers.

The web site can be designed with varying degrees of security. A simple password protected area can be installed in areas not open to general use. A deeper level of security can be obtained by housing EWNET on a secure server such as Netscape's commerce server. This option would automatically encrypt any information sent through it, and still the process is transparent to the user. A third level of security can be obtained through the use of encryption combined with the implementation of server—side Java (a programming language). Even greater security can be built through the creation of a virtual private network over the Internet. This would necessitate the installation of servers in each of the locations where secure correspondence would be sent and received. Each of the security options involves a greater level of sophistication, software, and cost.

In developing a technical protocol for EWNET, various options will need to be decided. A general estimate of the amount of information to be digitized and/or converted to HTML initially must be made, as well as an estimate of what graphics work is required: e.g., do logos already exist so that they can be scanned or will original graphics be designed? Will there be regular additions to the site such as photographs, maps, diagrams, etc.? Aside from allowing for multiple remote contributors and a listserv, will there be any other special functionality required such as forms or questionnaires for online completion? What level of security is required? i.e., does the system have to be secure to a determined and skilled hacker or to a curious but unauthorized researcher? Will the WWW site be hosted on your own server or a remote server?

Conclusion

In this abridged version of our initial proposal, we have described our suggestion of an early warning network, namely an academic-NGO-policy consortium than incorporates the gathering and analysis of information with response and communications research. The major strength of the proposed EWNET is that it utilizes existing expertise, knowledge, and authoritative personnel already located in universities, think-tanks, and government and international agencies within the field, rather than trying to employ personnel from scratch as a special early warning unit or agency which might cost the equivalent of $50 million and still not have the depth or breadth envisioned for EWNET. If you are interested in a complete version of this proposal and any updates on our efforts please contact the Prevention/Early Warning Unit at the Centre for Refugee Studies. ■

Notes

1. We do not intend, initially, to deal with the age-old problems of the relationship between intelligence and action such as signal to noise ratios; the disparity between inputs and the expectations of observers; the danger of crying wolf that can impair the credibility of any alert; and the problem of non-recognition accorded to the signaller who correctly appraises a danger that leads to action since the events being warned about are averted—in other words, the problem of rewards as incentives to those providing alerts.
2. For a detailed discussion of the problems and advantages of indicator analysis in early warning, see the Susanne Schmeidl's and J. Craig Jenkin's article in this issue.

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