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**ROLE OF EARLY WARNING SYSTEMS IN DECISION-  
MAKING PROCESSES**

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# **ROLE OF EARLY WARNING IN DECISION-MAKING PROCESSES**

## **Introduction**

An early warning system (EWS) can be defined as a system of data collection to monitor people's access to food, in order to provide timely notice when a food crisis threatens and thus to elicit an appropriate response (Davies et al, 1991). Whether it succeeds in its goal of eliciting an appropriate response is dependent on numerous factors, most of which are beyond the control of the EWS. How key decision-makers *use* early warning (EW) information is one of the most important factors.

This paper focuses principally on decision-making within donor aid agencies, with brief reference to decision-making within the government of the country/ area affected. In the most drought-prone and food insecure countries in the world, a swift and effective response tends to be highly dependent on donor governments. Of course there are numerous other decision-makers for whom EW information is useful and important: non governmental organisations (NGOs), commercial traders and farmers. However, EWS in the most drought-prone countries are rarely geared to commercial traders and farmers, although this is beginning to change in countries in southern Africa. NGOs are often dependent upon donor governments for the relief resources they need to respond to an impending crisis.

This paper is based upon evidence of how EW information has been used in some of the most food insecure countries of Africa. This topic was researched in depth in four

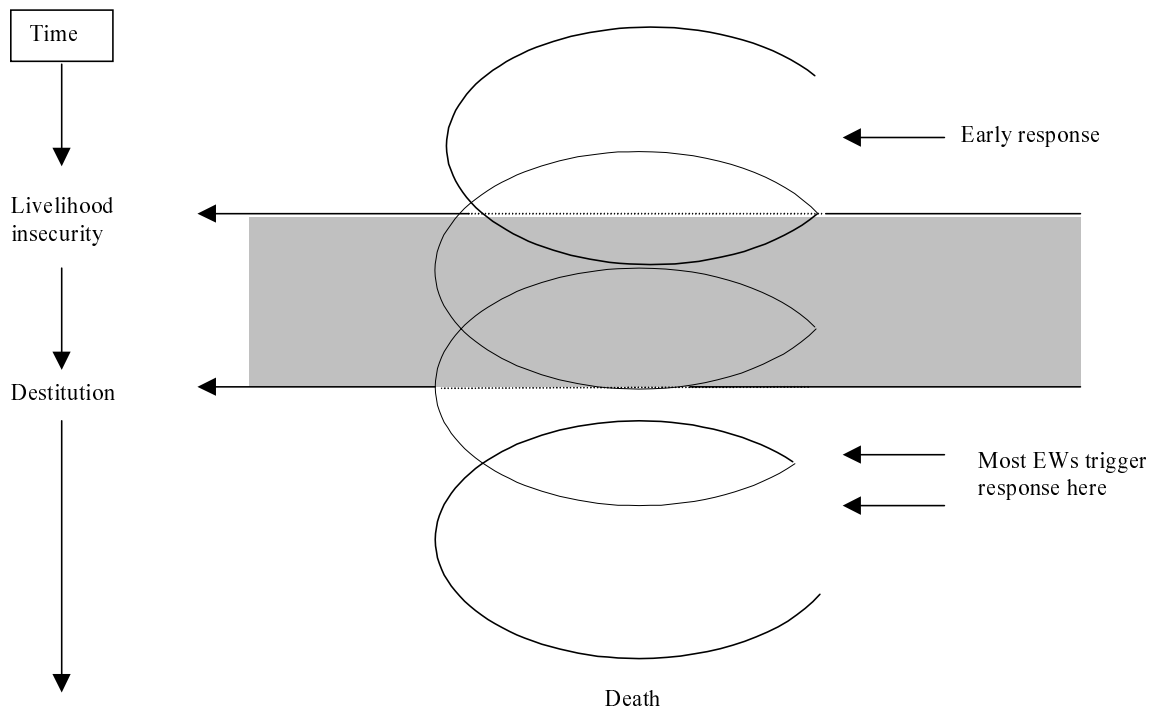
countries in the Sahel region in the early 1990s: Ethiopia, Sudan, Chad and Mali, and in one of the northern drought-prone districts of Kenya – Turkana (Buchanan-Smith and Davies, 1995). The paper also draws on a study of response to the 1997 El Nino Event in five countries in Sub-Saharan Africa (Thomson et al, 1998). And it reflects on the current drought and food crisis in Ethiopia.

### **What is an efficient and effective EW/ response system?**

It is of little use to look at an EWS in isolation. To be effective, it must be able to trigger a timely response, intervening *before* the point of destitution is reached, to protect livelihoods before lives are threatened. See Figure 1. In other words, the EW/ response system must be geared to protect future capacity to subsist as well as ensuring current consumption. Thus, the EWS must be sensitive to changes in food security status before famine threatens and able to detect localised pockets of acute food stress.

To achieve this implies a number of assumptions about the EWS and how it is used. It assumes that EW information is reliable, timely and consistent, that there are clear processes for feeding the information into decisions about how and when to respond, and that there are clear and rapid response mechanisms in place. In reality, this is rarely the case. The rest of this paper explores how EW feeds into decision-making in practice, factors that determine whether EW information is heeded by decision-makers, and identifies why it is not always used to its full potential. The paper concludes by identifying a number of ways in which the impact of an EWS can be strengthened, and a timely response launched.

**Figure 1: The timing of response in the downward spiral of famine**



Source: Buchanan-Smith and Davies, 1995

## **Factors affecting the take-up of early warning information**

### ***Ownership of early warning information***

Research shows that who 'owns' EW information is critical to how it is used. In other words, the source/ provider must be known and trusted. Donor agencies have frequently been sceptical of EW information provided by national government EWS, particularly where relations are strained and motives suspected. This was the case in the late '80s and early '90s in Ethiopia, under the Mengistu government. In effect, donors set up their own parallel EWS, only trusting the assessments carried out by the Food and Agriculture

Organisation (FAO) and by the World Food Programme (WFP), even though, in some years, this merely confirmed the figures of the national EWS.

This has since changed in Ethiopia, with the new political regime. It is now common practice for NGOs and WFP to participate with government in the teams that carry out the final round of assessments in order to minimise distrust over figures. Joint assessments involving government, UN and bilateral donors appear to be increasingly common in countries in Sub-Saharan Africa. For example, a joint assessment was launched in Kenya to assess needs in the drought-stricken north-east of the country in late '96/ early '97, and again to assess the impact of the El Nino floods in 1998. This is an important and positive development in terms of increasing the sense of ownership, and hence acceptance by international donor agencies of needs assessments.

In situations where senior donor representatives have carried out a field trip to the drought-affected area, and have first-hand evidence of an impending food crisis, this has sometimes proved to be the critical trigger to launch (or give much-needed impetus to) the international response. In Chad in 1991, the Systeme d'Alerte Precoce (SAP) organised a field mission of high-ranking donor and government representatives to five of the six Sahelian prefectures. As a result, the more doubtful were convinced of the severity of the food crisis, impressions were conveyed back to agency headquarters and the response treated with more urgency than before. Similarly, in Ethiopia last year, an ambassadorial mission to the north of the country in April was important in convincing donors that there was an immediate food crisis. The US Embassy declared an emergency

in Wollo two months later in June. Facilitating this kind of field mission may be an important way of triggering a major response where written EW bulletins have failed to generate a sense of urgency.

*A clear and consistent early warning message*

In the last 10 to 15 years there has been substantial investment in EWS. This has been very important in terms of improving the art of early warning, and developing and refining new methodologies and approaches. However, it has also meant a certain amount of duplication. Whilst most drought-prone countries will have their own national EWS, it is quite common to find a number of NGO-operated EWS, usually operating on a much smaller scale, for example covering the particular district/ location where the NGO is working. There are also examples of donor-operated EWS, of which the US Agency for International Development's (USAID) Famine Early Warning System (FEWS) is the most developed and best-known.

Whilst it might be argued that this proliferation of EWS enables cross-checking in the interests of greater accuracy, there is also a danger that different EWS generate contradictory information, confusing decision-makers and delaying a response. In Ethiopia in 1997, the National Meteorological Services Agency (NMSA) was warning of a higher probability of drought in the main rainy season of 1998 because of El Nino, which FEWS contradicted, saying that the probability of abnormal rainfall was only slightly changed from normal years. More influential in delaying the donor response in '97 was the lack of consistency of the early warning message over time. Thus, highly

publicised figures predicting national food self-sufficiency at the end of 1996 proved to be an inaccurate reflection of reduced relief needs, or of the potential for local purchase to meet food aid requirements. The donor response was ‘unusually poor and late’, delivering less than 15% of estimated relief requirements by 1<sup>st</sup> December 1997, long after the main hungry season (Thomson et al, 1998: 101).

In Kenya, responsibility for EW has been split between a number of different departments at national level. The absence of a single EW bulletin providing a clear and consistent message is a hindrance to timely decision-making, by government and donors alike.

### ***Interpreting early warning information***

The predominant response to drought-induced food crisis continues to be food aid, however unimaginative and blunt this may be as an instrument. The challenge is how to translate early warning data into food aid requirements. There are a number of crude and broadly accepted methods around, of which the food balance sheet is the most traditional and widely-used. However, some more recent efforts have attempted to refine the calculations, paying more attention to vulnerability and access to food, for example the Food Economy Approach pioneered by Save the Children (UK), and FEWS vulnerability assessment work. Translating EW indicators into data the decision-maker needs, may prove critical to triggering a timely response. For this reason, it may be particularly difficult for an EWS to recommend more appropriate non-food aid means of supporting

livelihoods, because this is not the kind of information that donors are geared to respond to.

The study on how El Nino information was used in 1997, shows that interpreting EW information based on probabilities was particularly difficult for decision-makers who need to relate it to their own perceptions of risk. By early 1998 some were claiming that the El Nino event had been overblown in southern Africa because of misunderstandings about what the forecasts meant, although ex-post verification shows that the forecast was mostly correct. The problem lay in how the information was interpreted, leaving the researchers to conclude that much has to be done at national level to customise forecasts and to provide appropriate interpretations (Thomson et al, 1998).

In Kenya, the EWS model pioneered by the Turkana Drought Contingency Planning Unit (TDCPU), which has now been scaled up to cover 10 districts in the north of the country, provides an interesting example of how EW data can be translated and communicated clearly to decision-makers. Although monitoring at least 18 indicators, covering the environment, the rural economy and human welfare, the EWS delivers a simple message to decision-makers. By using a pre-defined sequence of warning stages, from 'normal' to 'alert' to 'alarm' to 'emergency', it presents an easily understood summary analysis, directly linked to response interventions (see below).



## **Donor bureaucracies and the use of early warning information**

### ***The quest for certainty and quantitative information***

Early warning is an art not a science. An EWS makes predictions based on analysis of available information, inevitably tinged with an element of judgement. The data are never as comprehensive and accurate as the EW practitioners would like, and the earlier the warning, the less certain it will be.

This feature of EW sits uneasily with the culture of decision-making within many donor bureaucracies. This culture is usually risk-averse, seeking quantifiable proof that an emergency is imminent or already exists. Thus, there is a tendency for donor decision-making to be driven by downstream rather than upstream events, to be motivated by hard evidence rather than by predictions. How many times have those advocating an emergency response found that the most influential indicators are indicators of human stress, usually expressed as high rates of malnutrition and increased mortality? This can be a fundamental flaw in the EW/ response process – waiting for signs of the outcome of *failure* to respond in time.

In early 2000, officials in some donor agencies appeared to be waiting for evidence of increasing and high malnutrition to convince them of the need to respond to the food crisis in parts of Ethiopia. In the politically fraught context of drought in Sudan in 1990/91, indicators had to be ‘catastrophic’, in the words of one agency representative, to be taken seriously and treated with urgency. Even the well-publicised and very early

warning provided of the 1997 El Nino event encountered the attitude that ‘we’ll wait until something actually happens’ (Thomson et al, 1998).

This wait and see attitude is most acute in situations where political relations are least conducive to an early response. It is also accentuated when there is strong competition for relief resources from a number of major emergencies around the world.

The danger of this scenario is that it encourages EW practitioners to bid up the severity of the crisis to attract attention, which may eventually backfire if the situation does not deteriorate to the catastrophic levels predicted. This can undermine the credibility of the EWS.

### ***Bureaucratic rigidities***

Related to this tendency to delay relief decisions until there is clear evidence of a food crisis, most donor agencies do not pledge relief aid to countries in the Sahel and Horn of Africa early until early in the calendar year. However, this pre-supposes that the time-lag between decisions being taken and food reaching intended beneficiaries before the start of the hungry season (in June/ July – sometimes earlier) is less than six months. Evidence shows that the time-lag is often longer, particularly when transport and distribution within the country is taken into account, to reach those affected by the emergency in remote rural areas.

In Ethiopia in 1999, food aid pledges had almost met the government's appeal by May, but by the end of September 1999, at least 3 months after the start of the hungry season, only 281,000t had arrived out of 400,000t that had been pledged<sup>1</sup>. Similarly, WFP's internal procedures for accessing relief resources are protracted, and only triggered once the government concerned has launched its appeal. Then approval for a WFP appeal must be sought in Rome, before being sent out to donors. Eventually food is pledged and dispatched. This whole process can take a number of months. Thus, in 1998 in Kenya, WFP food aid did not reach the drought-stricken north-east of the country until May, 9 months after the relief operation had begun, and 4 months after the Government of Kenya had declared an emergency<sup>2</sup>.

The findings of the El Nino study revealed a different type of institutional rigidity which hampered preparedness and contingency measures. One of the most common responses of national governments to the predictions of an El Nino impact was to set up *ad hoc* committees, which were most active in pursuing an ongoing dialogue and monitoring, and less successful in modifying existing programmes and budgets to take account of the El Nino predictions. Indeed, a number of donors found it hard even to access funds for short-term preparedness initiatives. This applied to the Commission of the European Union (EU) and to the US Office of Foreign Disaster Assistance (OFDA).

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<sup>1</sup> Although fortunately the EFSR could be drawn upon for relief food – see below.

<sup>2</sup> Fortunately for the drought-stricken district of Wajir, OXFAM filled the breach until the WFP food arrived, distributing food aid purchased locally with funds from the UK's Department for International Development (DFID) (Buchanan-Smith and Barton, 1999).

In Ethiopia, the study concluded that the ‘annual relief operation has become so ritualised that it is even difficult for donors to respond quickly to emergency situations that occur outside the ‘normal’ timeframe’ (Thomson et al, 1998: 51). This appeared to be a factor contributing to the late response of donors to the food crisis in 2000. The timing of need in pastoralist areas in the south and south-east of the country was not adequately taken into account in the ‘usual’ food relief planning process.

## **Political factors influencing decision-making**

### ***Political will***

Perhaps the single most important factor that positively affects the use of EW information in decision-making is the political will to respond, both nationally and internationally. This is something that EW practitioners can do little to influence.

Experience in Turkana district in the early 1990s illustrates this particularly well. There were two episodes of drought: in 1990/91, and a year later in 1992. In the first episode, the EWS generated reliable information and recommended a response recommended. The District Commissioner was supportive, and donor/ government relations were good at district level. Thus, the political will to respond early was present, resources were made available and measures were taken to protect livelihoods before lives were threatened. Just over a year later, the context was very different although the EWS was still firmly in place. At national level, government was trying to play down the scale of the drought-induced food crisis, and was more concerned with preparations for the forthcoming multi-party elections. International donors were less well-disposed to the Kenyan

government, pushing for the transition to multi-partyism and for the government to improve its human rights record. The District Commissioner in Turkana was not supportive of a rapid response, and as a result the decision-making body in the district – the District Drought Management Committee – was paralysed. The relief operation started too late. Although full-scale famine was averted, there was acute food insecurity and human suffering (Buchanan-Smith and Davies, 1995).

The relationship between donor governments and the recipient government is usually the key determinant of international political will to respond. Although humanitarian aid is supposed to be exempt from political conditionality, political differences can seriously delay a relief operation if it becomes a pawn in political controversy and negotiation.

This has been the case for North Sudan during much of the 1990s. Antagonistic and distrustful relations between the Sudanese government and Western donor governments has meant that the government-held North has received proportionately less relief resources than rebel-held parts of the south, despite high levels of need, especially amongst the displaced population. In 1991, when the Sudanese government was supporting Iraq in the Gulf War, the stand-off between donors and government was particularly acute. The new government, which was actively pursuing a policy of food self-sufficiency, was reluctant to acknowledge publicly the severity of the food crisis. Meanwhile, donors insisted that the government admit that there was a humanitarian emergency before they were prepared to launch a major response. This symbolic wrangling over language shows just how political early warning information can become.

In Ethiopia this year, the Emergency Food Security Reserve (EFSR) has been allowed to drop to dangerously low levels. This has been a major factor behind the slow response to food crisis in the south and other parts of the country, partly because some donors were slow to honour pledges to replenish the EFSR after heavy draw-downs the previous year. Although there are a number of reasons for this, some suspect that continuation of the war between Ethiopia and Eritrea, affecting relations between the Ethiopian government and international donor agencies, was a key influence.

### ***Influence of the media***

Dreze and Sen (1989) argue that a free press, which is usually associated with a democratically elected government, is one of the best protections against famine. This, they claim, has been a major positive influence in preventing famine in India.

There are numerous examples of how the international media has triggered an international response. The best-known, and perhaps the best-documented case was the 1984 famine in Ethiopia, when a famous BBC television documentary exposed to the world the horrific famine that was unfolding, and the international community's failure to respond in time. On a much lesser scale, international media coverage of the current food crisis in Ethiopia helped to trigger a more energetic and increased response from many western donors earlier this year.

However, acute food insecurity only becomes newsworthy when famine is imminent or already present and the pictures are guaranteed to shock. It is of little use for publicising

genuine *early* warning, with the possible exception of the widely broadcast forecasts associated with El Nino in 1997. In most cases, the media is a last resort for exasperated EW practitioners and others, desperate to trigger a response before famine becomes fully-blown.

This relates closely to the issue of accountability. Where lines of accountability between those affected by food crisis and those with the necessary resources to prevent it, are clear and effective, there is a much greater chance that early warning signals will be heeded by decision-makers. In Kenya the introduction of multi-partyism and an increasingly robust and critical free press have been positive influences in speeding up the response to emergencies of all kinds during the 1990s.

When it comes to international donors, the accountability link to famine victims is extremely tenuous. The latter are far removed from decision-making in agency headquarters in Europe or America. The accountability of Western donors is usually limited to Western public opinion, which may be mobilised by the media to act on behalf of those threatened by famine elsewhere in the world. But as argued above, this rarely works in favour of *early* warning being heeded. It is most likely to trigger a late response.

### **Improving the use of early warning information in decision-making**

Whilst there is still scope to improve early warning methodology, the greatest challenge facing many EWS is how to ensure their information is taken seriously by decision-

makers and acted upon to ensure a timely relief response. There are a number of ways of strengthening this link.

1. First and foremost, it is critical that the EWS makes its information accessible, easy to interpret, and delivers a clear consistent message to decision-makers, that they can act upon. Although this seems obvious, it can be hard to achieve in practice, if information is patchy and methodologies of different EWS conflict.
2. Early warning information is most likely to be used if it is trusted. And it is most likely to be trusted if the decision-makers have a stake in the system and really understand it. For this reason, in countries that are dependent on international humanitarian aid to relieve food crisis, it often makes sense for EWS to be jointly funded by donors and by government. In these circumstances, it is more likely that the political influences an EWS is subject to can be negotiated over. And the problem of a purely national EWS being bypassed by the international community insisting on its own assessments is less likely to arise.
3. In order to counteract the decision-makers' tendency to delay a response until there is hard evidence of a crisis, ignoring genuine *early* warning, a phased response could be promoted by the EWS. This particularly applies to donor agencies, where there are long time-lags involved in mobilising, shipping and transporting relief in-country to the final beneficiaries. Thus, for Sahelian countries, for example, rather than wait for harvest assessments to be complete, which leaves six months or less to mobilise and



deliver relief resources, the pledging process could begin much earlier, in September/October, in response to preliminary estimates of the *minimum* amount of relief that is likely to be required. Although this would require re-programming of donor bureaucracies, and early indicative assessments by the EWS, it could make a substantial difference to the timely provision of relief resources.

4. Where drought is a frequent occurrence, the more that can be done in advance the better, in terms of contingency planning and identifying clear institutional and decision-making responsibility for an emergency response. As far as possible, contingency measures should be integrated into development plans and the development process, so that an appropriate response is expected, indeed is automatic, when drought hits, rather than having to be argued for every time. In other words, bureaucratic inertia works in favour of a response rather than against it<sup>3</sup>.
5. Finally, the pre-positioning of relief resources is one of the best options for ensuring a timely response where international aid is depended upon. It can substantially reduce the time lag between early warning information being made available and the necessary relief resources reaching those affected. This may be feasible and cost-effective only for the most drought-prone countries, where emergency relief operations are a frequent requirement. Ethiopia was an obvious candidate, and now has an Emergency Food Security Reserve. Supported financially by international

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<sup>3</sup> This was a key feature of the innovative EW and response system designed for Turkana district in the late 1980s. Each of the four warning stages, described above, was linked to a pre-determined set of responses that was supposed to be triggered automatically, although the 'how' of implementation has sometimes proved problematic.

donors, the reserve is managed by a joint committee of donors and government, and is designed to cover the bridging period while relief aid is being imported. The potential of the EFSR to improve the timeliness of the relief response is substantial. However, as described above, even this more long-term facility can be affected by donor/government relations.

Although political will is a key ingredient to ensure that EW information is heeded by decision-makers, the above measures should help to ensure that the information is used by decision-makers and that the right mechanisms are in place to facilitate a timely response.

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