



The Proceedings of the

HEALTH EMERGENCIES & DISASTERS

A Multi-sectoral Round Table
Discussion and
Focus Group Discussion

31 July 2006
Kanato Room
Royal Mandaya Hotel
Davao City

A Joint Project of the
University of the Philippines in Mindanao
and the
**Philippine Council for Health Research
and Development - DOST**





TABLE OF CONTENTS

Executive Summary

The Proposal

Opening Statements

Prof. Ricardo M. de Ungria

Chancellor, University of the Philippines in Mindanao (UPMin)

Dr. Jaime C. Montoya

Director, Philippine Council for Health Research and Development-DOST

Mr. Mario Verner Monsanto

Chief Operating Officer, Central 911, and

CEO, Davao City Disaster Coordinating Council

Framework Setting

Dr. Lilian A. de las Llagas

Vice Chancellor for Administration, UPMin

“Global Health Emergencies with Local Implications”

Dr. Ma. Lourdes M. Barrameda

Emergency and Humanitarian Action Officer, World Health Organization

“Understanding GIS and its Uses in Health Care Services and Disaster Management”

Prof. Vicente B. Calag

Chair, Department of Mathematics, Physics and Computer Science

College of Science and Mathematics, UPMin

“Assessing Disaster Reduction in Eastern Mindanao and Greater Davao City: Possibilities, Probabilities and Objectives”

Mr. Sean Michael Fitzgerald

UPMin Visiting Lecturer from the University of Massachusetts-Amherst

Reaction (Regional Perspective)

Dr. Paulyn Jean R. Ubial

Regional Director, Department of Health - Region XI

Reaction (City Perspective)

Dr. Rene Elias C. Lopez

City Councilor, Davao City

Reaction (Geo-hazards Perspective)

Engr. Mario Luis J. Jacinto

Davao City Planning and Development Coordinator

Reaction (General Perspective)

Dr. Teodoro Herbosa

Convenor, Health Emergencies and Disasters Study Group

National Institute of Health, U.P. Manila

Closing Statement

Dr. Gilda C. Rivero

Vice Chancellor for Academic Affairs, UPMin

Open Forum and Resolutions

Evaluation and Recommendations

Directory of Participants



EXECUTIVE SUMMARY

A by-product of the Multi-sectoral Round Table Discussion (RTD) / Focus Group Discussion (FGD) that was organized by the University of the Philippines in Mindanao (UPMin) and the Philippine Center for Health Research and Development (PCHRD) - DOST in Davao City on 31 July 2006, this document is a compendium of short lectures, reaction papers, and discussions on *“Health Emergencies and Disasters.”*

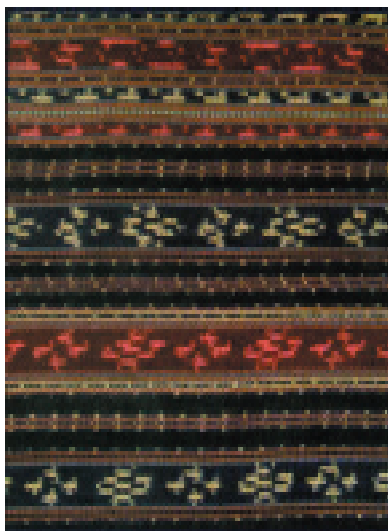
During the RTD, UPMin Chancellor Ricardo M. de Ungria stressed that the key to dealing with disasters is not to sound the alarm bell but to equip the people with appropriate knowledge about them. While PCHRD-DOST Executive Director Jaime C. Montoya emphasized the need for self-sufficiency in health emergency and disaster preparedness.

RTD Program Coordinator Dr. Lilian A. De Las Llagas, a professor of public health from U.P. Manila and currently the Vice Chancellor for Administration of UPMin, started the ball rolling by setting the framework for the discussion, highlighting the need to combine human systems with Earth systems.

The topic *“Global Health Emergencies with Local Implications”* was discussed by Dr. Ma. Lourdes M. Barrameda, a World Health Organization Emergency and Humanitarian Action Officer. Her presentation was followed by a brief lecture of UPMin Prof. Vicente B. Calag on the ins and outs of the Geographic Information System (GIS), as well as its uses in health care services and disaster management.

On the other hand, UPMin Visiting Lecturer from the University of Massachusetts - Amherst Mr. Sean Michael Fitzgerald gave an insightful, thought-provoking—and, to an extent, alarming—presentation on *“Assessing Disaster Reduction in Eastern Mindanao and Greater Davao City: Possibilities, Probabilities and Objectives.”*

Honest-to-goodness reactions were given by DOH XI Regional Director Dr. Pauly Jean B. Rosell-Ubial (*for the regional perspective*), Davao City Councilor Rene Elias C. Lopez (*for the city perspective*), Davao City Planning and Development Coordinator



Engr. Mario Luis J. Jacinto, (*for the geo-hazards perspective*), and U.P. Manila Prof. Teodoro Herbosa (*for the general perspective*).

Gamely facilitated by UPMIn visual arts Prof. Ma. Araceli Dans Lee, the RTD participants from Davao, Cotabato, and General Santos, local government agencies, non-government organizations, and the private sector exchanged their experiences and ideas on health emergencies and disasters, as well as their opportunities for collaboration and/or integration.

Dr. Mely Lastimoso, a community doctor from General Santos, struck a chord with the RTD participants when she said, *“I have attended many gatherings like this in the past where many speakers had excellently talked about various health topics. Sadly, in my 19 years of medical service in the local communities, I have observed that these talks have not really been translated into concrete programs at the grassroots level. We hope this RTD will not turn out to be another exercise in futility.”*

Consequently, the participants resolved that this RTD would not just be another pointless and purposeless prattle.

In conclusion, they committed to establish a network among themselves, collaborate in areas of mutual interests, and to conduct a wider conference—hopefully within the year—so that issues on health emergencies and disasters can be effectively discussed and addressed.



U.P. in Mindanao and PCHRD-DOST holds Health Emergencies & Disasters Forum, with speakers Dr. Malou Barrameda of World Health Organization, Prof. Sean Fitzgerald of Univ. of Massachusetts, Prof. Vicente Calag of UPMIn, attended by city officials of Davao, Cotabato and Gen. Santos with Red Cross, U.P. Manila, Dvo Med School, Catholic Relief Svc, RC Waling-waling, DOH, RDCC-OCD, BFP, DENR, Pag-asa, DA-BPI, DepEd, MEDCo and PNP-XI.



THE PROPOSAL

In our lives, disasters have certainly caused terrible and appalling damage, loss, and distress to countless people. Recent disasters include the international outbreak of the SARS and the avian influenza, the landslide in Guisauon that has practically wiped out a town in Southern Leyte, the destructive earthquake in Kashmir in October that killed more than 73,000 people, the recent 6.2-magnitude killer quake in Java that until now has triggered active Mt. Merapi to continue spewing clouds of ash and lava in Indonesia, the 2004 Indian Ocean tsunami that claimed more than 230,000 lives across South Asia.

Experts believe that the key to dealing with disasters—whether natural or man-made—is not to sound the alarm bell but to equip the people with appropriate knowledge about them and to help foster a culture of preparedness among the public.

The many disasters and health emergencies that have occurred in the Philippines and elsewhere have elicited threats and fears from various levels and sectors of the society. UPMin, cognizant of these challenges and concerns, aims to be involved and is equally committed to integrate with other concerned agencies to bring about a common platform to address these problems.

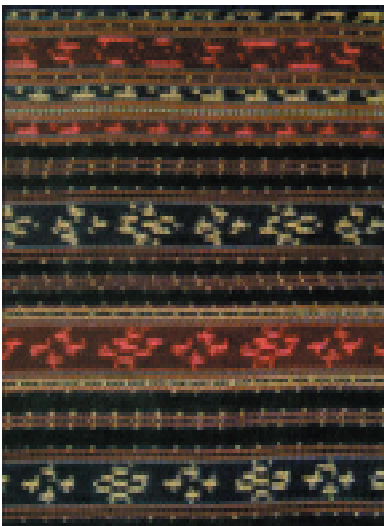
In collaboration with the Philippine Center for Health Research and Development (PCHRD) - DOST, UPMin conducted a Mindanao-wide Multi-sectoral Round Table Discussion (RTD) / Focus Group Discussion (FGD) on “**Health Emergencies and Disasters**” at the Royal Mandaya Hotel, Davao City, on 31 July 2006, with the following objectives:

1. To discuss and exchange views on the nature and impact of health disasters and emergencies on human population and the environment:

Topics: Health Disasters and Emergencies; Context of Emergencies; Global, Regional, and Local Disaster Management;
2. To exchange ideas and experiences on disasters and health emergencies;

3. To discuss opportunities for collaboration and/or integration;
4. To craft specific areas of collaboration; and,
5. To assess the potential of creating a multi-agency task force or network for Mindanao.

Local government units from Davao, Cagayan, Cotabato, and General Santos were invited to participate in this gathering, including key government agencies, non-government organizations, business sector, and the World Health Organization.





OPENING STATEMENTS

Prof. Ricardo M. de Ungria

Chancellor, University of the Philippines in Mindanao



PCHRD Director Jaime Montoya, esteemed speakers and reactors, distinguished guests, LGU participants from Cotabato, General Santos, and Davao, our friends from key government agencies, non-government organizations, business sector, my colleagues in the academe, *maayong buntag sa tanan*, and welcome to our Multi-Sectoral Round Table Discussion / Focus Group Discussion on “Health Emergencies and Disasters”!

First of all, I would like to thank our funding agency, the Philippine Center for Health Research and Development - DOST, for supporting this important project. Without its assistance, this multi-sectoral gathering would not have been realized. So, *mga higala*, let us give the PCHRD a big hand!

Just in case you do not know yet, July is a *Disaster Consciousness Month*. And while we observe *disaster consciousness* this month, we have also been made aware of two (2) recent incidents that have affected our country in both local and global contexts.

In Bicol, the restive Mt. Mayon is continuing to spew an increasing volume of lava, forcing residents in its surrounding areas to flee their homes to avoid its thick, hazardous ashfalls and the potential collapse of its lava fragments on its steep slopes.

In Lebanon, thousands of our OFW *kababayans* are being evacuated—not without controversy—from Lebanon’s war-torn cities, like Beirut, back to our country, through our government’s contingency team in the Middle East.

These two (2) recent incidents—one natural, one man-made—remind all of us stakeholders of the urgency of the issues on emergencies and disasters that we are facing nowadays.

The beauty of our country, as we all know, is matched only by the numerous perils that attend it. Located along the Pacific Ring of Fire, the Philippines has a myriad of active volcanoes, fault lines,

and colliding plates that can trigger catastrophic earthquakes and tsunamis at any time, not to say the perennial procession of typhoons that wreak havoc in our daily lives by bringing floods, landslides, and any number of diseases.

Public health concerns, like the outbreak of the SARS and the avian influenza, and man-made emergencies and disasters—like fire, floodings, stampedes (the most popular of which was the recent ULTRA stampede in Manila), terrorist bombings, Chemical, Biological, Radiological, and Nuclear (CBRN) occurrences—prod us to seriously discuss and share with one another ideas on and experiences with disasters that have grave and oftentimes fatal consequences on people and the environment, as well as our preparedness—or lack of it—in dealing with the health emergencies in the wake of such disasters.

More importantly, disasters—or the mere threat of these—encourage us to explore areas of collaboration with our partner agencies and institutions so that we can work together in helping our local authorities effectively deal with them whenever they arise—or even before they arise.

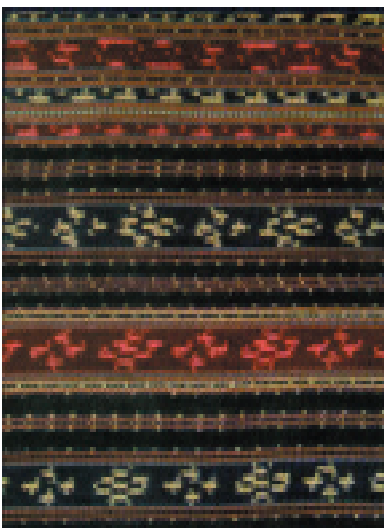
The U.P. System recently received confirmation of the fact that all its seven (7) constituent units lie—quite serendipitously—along fault lines, and have consequently formed a Committee on Geo-hazards to deal with emergencies brought about by such a fact. It has also recently identified four (4) research areas as its potential contribution in disaster management, namely: (1) hazard mitigation and management, (2) hazard preparedness, (3) disaster response, and (4) disaster rehabilitation and recovery.

Here in UPMin, we are offering our Geographic Information System (GIS) services in our Mintal campus to Local Government Units in conducting studies on geo-hazard risk assessment and potential outbreaks of diseases in Mindanao. We believe we can do this effectively in collaboration with your agencies and institutions.

At no other time in human history than today has human life been rendered more meaningless and worthless than ever as a result of wars all over the place and of natural calamities that—for all the sophistication of our latest devices and machines for comfort and life enhancement—always catch us flat-footed and unprepared. And for all the data we have on it, a disaster—or the moment of it—remains a mystery, like grace and human love.

We are therefore reaching out to everyone in this room today so that we can share our narratives and experiences and work together in bringing about a common platform to address problems of health emergencies and disasters on the ground, and thereby prevent further unnecessary loss of precious human lives here and everywhere.

Consequently, I look forward to a fruitful discussion with you on this topic this morning! *Madayaw, ug maayong buntag sa atong tanan!*





Dr. Jaime C. Montoya

Executive Director, Philippine Council for Health Research and Development - DOST

“The Need for a Pro-active Rather Than Reactive Response to Disaster Management”

First, let me extend my appreciation to the organizers for inviting me to be one of the participants in this round table discussion on managing health emergencies and disasters.

I would also like to say that I also appreciate what you wrote in your invitation letter, which, I am sure we all share, that the key to dealing with disasters is not to resort to the knee-jerk response, but to equip people with the appropriate knowledge way ahead of time to enable them to deal with the consequences should a natural or man-made disaster occur. The very concept of preparing, or anticipating disasters and emergencies is also worth pondering upon because it not only involves science, but also has a cultural component in that it goes against the Filipino practices of “*bahala na*” and “*ipagpasa-Diyos na lang*” attitudes.

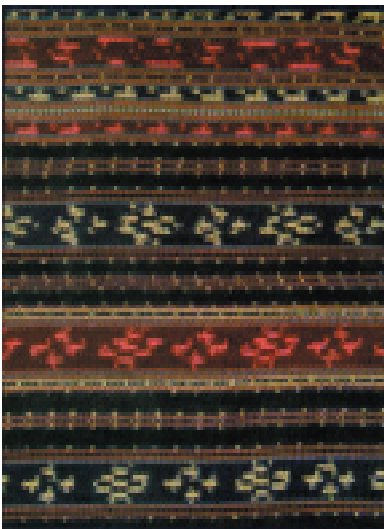
We cannot afford to fall back on these practices anymore. The experience of the United States with hurricane Katrina is a very graphic reminder that a huge disaster could even catch one of the world’s most powerful countries helpless and flat-footed. That, plus the fact that the richer countries are now exhibiting what has been called “donor-fatigue.”

Thus I am looking forward to sharing, as well as learning new ideas this morning, not only as head of the PCHRD, but also as representative of the Philippine National Health Research System (PNHRS), on how we, as a country, can help ourselves should a massive emergency happen in the country.

But before I turn over the floor to the Honorable Mayor, I would like to mention the areas in which PCHRD and the PNHRS could offer assistance, based on the objectives that you have set for this discussion.

One is in the area of information sharing.

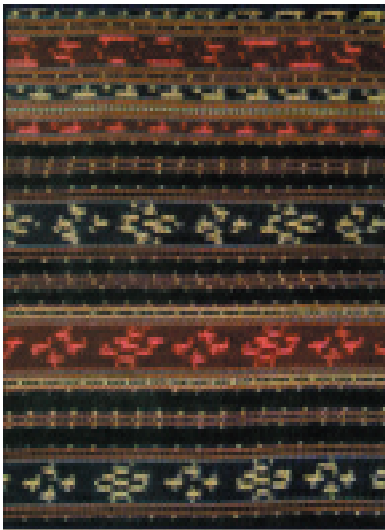
PCHRD has extensive databases on a number of subjects. We could probably consolidate all available information on health emergencies and disaster management, both locally and internationally, into one specialty database that could be accessed for free from any computer. We would also welcome if you have information on locally conducted researches, especially here in Mindanao, on how local residents have dealt with the previous emergencies that have visited Mindanao. This database could serve as a virtual “*pulong-pulong*” center for a healthy exchange of experiences. A specialty database would also make it easier to track down what gaps still exist in disaster management, especially in the



Philippines, or what studies need updating.

We can also assist in the area of connectivity.

You must have heard of the PCHRD-assisted projects on the Multipurpose Community Telecenters (MCT), which was a joint project with the International Development Research Center. The project was started in 1999 and was meant to jumpstart rural development through the use of information and communication technology (ICT). Four (4) telecenters were established under this project in the following barangays in two provinces in Mindanao: Barangay Maguinda, Butuan City and Barangay Jaliobong, Kitcharao in Agusan del Norte; and Barangay Malingao, Tubod and Barangay Taguitic, Kapatagan in Lanao del Norte.



I am looking at these telecenters as possible information hubs where information other than health can be accessed. PAGASA and PHILVOCS, for example, have a number of new researches that can be useful for the various regions, such as the “Development of a regional climate model of the Philippines” and the “Prediction of rainfall associated with the Southwest monsoon surge.” DOST, in the past year, has also initiated the implementation of a project for the upgrading of PAGASA’s Interactive Climate and Weather Information Network (PICWIN).

Access to these digital information is now made easier through DOST’s project PREGINET, the Philippine Research, Education and Government Information Network, which is being implemented by the Advance Science and Technology Institute. A total of ninety-six (96) organizations are now benefiting from the services provided by PREGINET, through three (3) exchange points and twenty (20) access points that are strategically located throughout the country.

Finally, we offer our assistance in capacity building.

President Gloria Arroyo, in her recent State of the Nation Address, spoke about the creation of macro-regions. This, in effect, calls for the development of self-sufficiency in the various regions, especially in the management of local emergencies.

Perhaps our colleagues from the various local government units who are with us today could, for instance, identify what specific information they need at this point in time to help them with their respective disaster management plans. They could also pinpoint the most geographically-accessible locations to their residents where access points could then be installed for information hubs in case an emergency occurs and the province is cut off from Manila. Our local experts could also probably come up with proposals for training programs for local health workers. We all know that when disaster strikes, especially in the provinces, help in the form of medicines, technology and manpower may not be immediately available, especially when roads and airports sustain extensive damages. This fact, coupled with the continuing exodus of our health workers, doctors and nurses abroad should alert us that we need to train the local *komadronas*, *hilots* and other care-givers

on the basics in emergency assistance at the soonest possible time. This could be done through PCHRD's Twinning Project where a regional institution is paired with a Manila-based institution for capacity building.

I am sure that we would have so much to discuss this morning given the spate of emergencies that seem to be hounding the rest of the world. But the key word here is self-sufficiency. God forbid but should a disaster strike our country, the major international networks would surely cover it. And of course the global community would be transfixed before their televisions commiserating with the people half a world away. But after this so-called "CNN-effect," what next? *Paano na tayo?* I am sure none of us would like to end up



Mr. Mario Verner Monsanto (for Mayor Duterte)
Chief Operating Officer, Central 911, and Chief Executive Officer, Davao City Disaster Coordinating Council

The need of disaster preparedness is more pronounced now than ever before. Through the years, Filipinos responded to the calamities that struck their communities through a variety of ways and methods. But these were mostly consequential - search and rescue, and at times recovery operations, relief and aid distribution activities, and rehabilitation of ravaged population and environment.

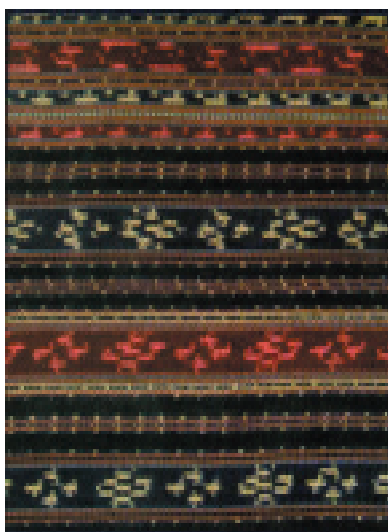
The effort to cultivate a culture of preparedness was never really given the attention it so deserves. But, this is not so anymore—so I hope!

In more ways than one, the University of the Philippines in Mindanao and the Philippine Council for Health Research and Development are trailblazing their way into history with this Mindanao-wide multi-sectoral round table discussion that they are initiating on HEALTH EMERGENCIES and DISASTERS.

Disasters have occurred in other parts of the world, resulting in heavy losses to human lives and properties. But we do not have to look beyond our shores to meet eyeball to eyeball the devastation and havoc that disasters bring. We also have our stories to tell about human misery, loss of lives and destruction of property that could have been minimized had our people been oriented and convinced on the importance of being prepared long before the occurrence of disasters.

I would say that this activity is timely and relevant. There is no other time to realize the importance of the culture of preparedness than today.

Yes, I am one with UPMin Chancellor Ricardo de Ungria when he said that the key to dealing with disasters, whether natural or man-made, is not to sound the alarm bell but to equip the people with appropriate knowledge about disasters and to help them foster a





FRAMEWORK SETTING

Dr. Lilian A. de las Llagas
RTD Project Coordinator, and
Vice Chancellor for Administration, UPMin



Maayong buntag, Dr. Jimmy Montoya, DOST director of PCHRD, Chancellor de Ungria, Vice Chancellor Gilda Rivero of UPMin, our partners and friends, our speakers and reactors.

Of the six (6) regions identified by the WHO in terms of degree of natural disasters, the Philippines is classified under “the most number of disasters.”

I would like to cite some definitions of WHO, which I find very important for us to understand what we are trying to talk about this morning:

“Hazard – is any phenomenon that has a potential to cause disruption or damage to the community.”

“Emergency – is a stage in which normal procedures are suspended and extraordinary measures are taken in order to avert the impact of a hazard on a community.”

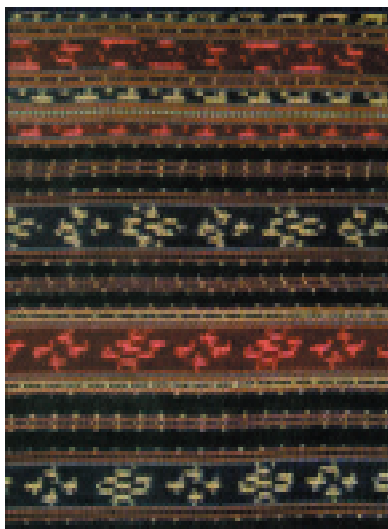
Unless the provincial, and city authorities and communities are adequately prepared for and ready to respond effectively to an emergency, normal conditions of existence may be disrupted. The level of suffering may exceed the capacity of the community to respond.

Thus, some emergencies may become disasters when they are not properly managed.

What is proper management in the context of health emergencies and disasters?

Some questions were offered to help us look for possible answers:

First, can we prevent disasters? Are all disasters preventable?



Which are not preventable? Do we need to prevent hazards to prevent disasters? Are there available predictors to prevent hazards to a disaster? What are these? Are these available? Can we avail of it? What is the worldview? Is it disaster management or health emergency management? What happens when natural disasters occur? Who is in-charge? Who gets orders from who? Are we prepared? Who can help and how? What is the trend of global health disasters? Emerging and re-emerging infections? Do we have predictors or forecasting tools that we can use?

Another question is very important. Why should U.P. be involved here?

U.P. is the convenor of this round table discussion / focus group discussion—but it looks like a conference to me now with the number of people attending!

UPMin, cognizant of the threats/risks and consequences of disasters, is committed to be involved and to integrate with all of you to bring about a common platform to address these challenges.

UPMin has its moral and social obligation to the country and society.

It has the opportunity to share its ideas, knowledge, and models.

The lectures of UPMin Visiting Lecturer Sean Fitzgerald and Prof. Vicente Calag will give us a better view of the whats, the whys, and the hows of disasters, the risks involved, the strategies that can be adopted, and the need to effectively communicate them to the public.

We have U.P. alumni who are as ever committed to the cause and direction of the University.

We have faculty members who are capable of doing research and extension work.

We have linkages and networking.

And most of all, we have the commitment to serve and share with you what we have.

We have decided to hold this RTD so that it can serve as a venue for everyone who has something to give, to offer, or perhaps, to add.

We thank WHO for sending Dr. Barrameda to share with us an overview of the many global health emergencies and disasters that threaten us and have local implications in Mindanao.

Our experts from U.P. Manila - National Institute of Health, PGH, the city government, the Center for Health Development in Mind-

anao Region XI, will delight us with their thoughts, provocative and otherwise, and maybe help us think of better ways to address our concerns.

The participants coming from General Santos City and Cotabato City and their health officials, City Planning officers, and City Disaster Coordinating Council are here with us as well, to tell us about their own experiences and their own recommendations.

We are certain just by the type and number of agencies present today, namely: Department of Environment and Natural Resources, the Department of Health XI, the Department of Education, the CHED, the Department of Social Welfare and Development, the Department of Science and Technology XI, the PCHRD, the Bureau of Plant Industry, the Bureau of Fire Protection, the Office of Civil Defense, the Regional Disaster Coordinating Council XI, the Bureau of Mines and Geosciences, the Sangguniang Panlungsod, the City Planning Office, the Davao City Mayor's Office, the City Disaster Coordinating Council, Central 911, the Davao City Health Office, MEDCo, the Institute of Primary Health Care, the Catholic Relief Service, U.P. alumni and friends, the Mindanao Business Council, faculty, WHO, U.P. Manila - College of Public Health, NIH, PGH and, of course, the media.

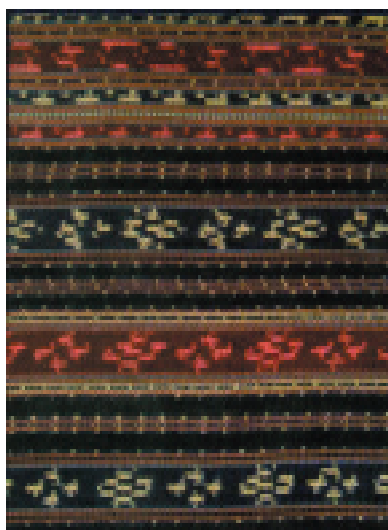
We can discuss opportunities for collaboration and integration. We can discuss about forming a group, multi-agency, multi-sectoral as counterpart of the Health Emergencies and Disasters (HEAD) Study Group, headed by Dr. Herbosa.

We can establish a network or a task force to prepare a road map on health emergencies and disasters management.

We can formally document the proceedings to ensure information retention and dissemination, including the agreed course of action that we can take as a group in the future.

To all of you, U.P. and PCHRD share this framework.

Thank you very much.





Global Health Emergencies with Local Implications

Dr. Ma. Lourdes M. Barrameda

Program Officer for Emergency and Humanitarian Action at the Office of the World Health Organization Representative to the Philippines



Introduction

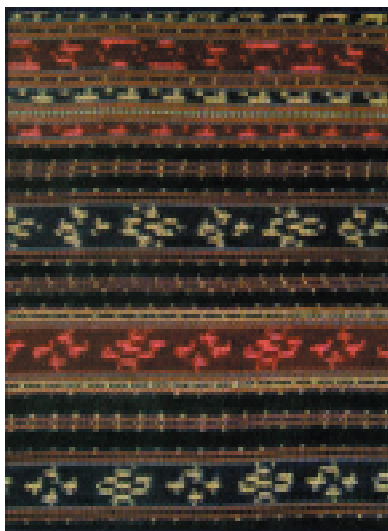
9/11. The 2004 Asian Tsunami. SARS. The recent Pakistan earthquake. Flooding and landslides in Asia. The ongoing crisis in the Middle East. Not a day goes by anymore where no mention of any disaster or health emergency is made, local or internationally. Emergencies and disasters have become a fact of life. Experts tell us that at least for natural hazards, like typhoons, flooding and other hydrometeorologic hazards, we should expect more of these and probably of increasing severity because of the climate changes brought about by global warming.

Mindanao, of course, is not a stranger to disasters and emergencies and is certainly not exempt from the danger of being hit by new ones.

This paper aims to give an overview of the many global health emergencies and disasters that threaten us and have local implications in Mindanao.

Dr. Barrameda was former executive director of 24 Hour TV Charity Committee Philippines, Inc., an affiliate of 24 Hour TV Charity Japan, an NGO with a disaster health management program which played a vital role in relief and rehabilitation efforts after the 1990 Baguio/Luzon earthquake and the 1991 Mt. Pinatubo eruption.

A cum laude graduate of BS Psychology in U.P. Diliman, Dr. Barrameda earned her degree of doctor of medicine from U.P. Manila. She is currently working towards her master's degree in public health.



Natural Hazards

The 2004 Asian Tsunami probably best illustrates how a natural calamity of such magnitude and severity can affect not just one country or region but several all at once.

Mindanao has plenty of its own earthquake generators that can cause tsunamis. The coastal areas facing the Celebes Sea are more vulnerable because tsunamigenic earthquakes in the past often originated from the bottom of the Celebes Sea. The tsunami that hit Mindanao on August 16, 1976 killed more than 3,000 people with at least 1,000 missing, 8,000 injured and displaced 12,000 families. This resulted from the movement of the Cotabato Trench.

Tsunamis can also be generated by earth movements far from our shores. This was demonstrated by the Asian Tsunami from Indonesia reaching the shores of Africa and bringing death and destruction several hours after the earthquake struck in Indonesia.

The haze, secondary to forest fires in Indonesia, is another natural hazard that has the potential of affecting the health of people in Mindanao. In 1998, the region saw this transboundary air pollution covering vast areas of the region. It affected much of Indonesia, Malaysia, Singapore and reached Mindanao. The unhealthy air expectedly caused an increase in cases of respiratory complaints especially among the vulnerable population in the region. (Studies show that air pollution not only affects the respiratory system but can trigger cardiovascular events as well.) Schools and offices had to be closed. The tourism industry of the affected countries suffered. It disrupted airport and shipping operations and led to considerable economic losses. It had become a serious regional environmental and health problem.

While much effort has been done by the Indonesian government and also by the international community to prevent and mitigate the effects of Indonesian Forest Fires, they still persist up to the present. Even now, there are some Indonesian Forest Fires raging which affect some parts of Northern Malaysia and Southern Thailand. Fortunately, the haze has not reached our shores this time.

The effect of climate change is not confined to any particular country or region. Mindanao then can also be expected to be hit either by more rain and flooding at certain times and perhaps drought at others. There is certainly a need then to increase the preparedness of each region in Mindanao to these hazards.

Emerging and Re-emerging Diseases

Globally, an average of one new infectious disease has emerged/re-emerged each year. Most are zoonoses. How they evolve or

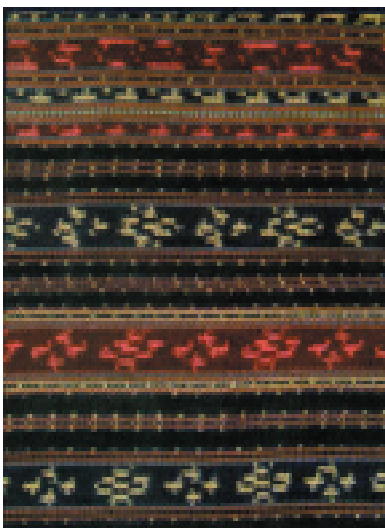
re-emerge shall not be discussed here. Suffice it to say that the microbial world adapts, becomes resistant to the usual anti-infective drugs, develops the capacity to counter vaccines, and exploits new opportunities for emergence and epidemics.

Perhaps one of the most serious health threats today is Avian Influenza. The strain under careful monitoring and surveillance right now is the H5N1 strain. While it is strictly speaking an infectious disease of birds, it very well can and has actually led to serious economic losses for many nations in Asia in 2004. This was the result of the need to cull infected and potentially-infected birds to control the epidemic. A similar scenario can unfold here in Mindanao if bird flu reaches this island. There are areas after all in Mindanao that are on the path of migratory birds which are potentially infected by the bird flu.

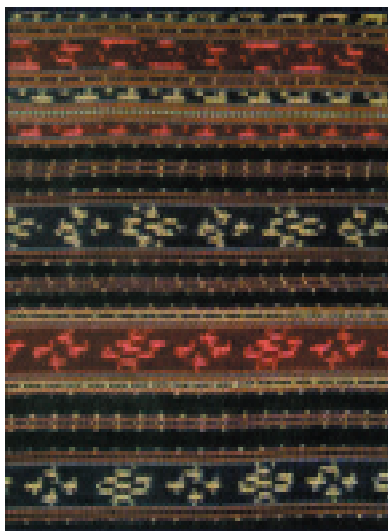
Much more ominous, however, is the fact that the virus can affect humans directly, causing severe disease and high mortality rate among those it infects. If the virus transforms so it can spread easily from human to human—given the ease with which the virus can be spread all over the world nowadays—an influenza pandemic could occur with dire consequences not only for Mindanao but for the whole human race.

Experts say that border restrictions and internal travel restrictions are unlikely to delay the spread of the influenza pandemic by more than 2-3 weeks unless such restrictions are 99% effective. Given the porous nature of our borders, implementing any travel restrictions in the event of a pandemic will be very challenging.

As of July 26 of this year, there has been no case of bird flu in the Philippines in birds or in humans. Globally, there have been a total of 232 cases with 134 deaths from avian flu in humans, the latest of which was a boy from Thailand who was in contact with infected poultry. The most number of cases come from our neighbors Indonesia and Vietnam, although no case from Vietnam has been reported lately. While there have been cases of human-to-human transmission, these have been quite limited, indicating that the capability of the virus for human-to-human transmission is not yet that efficient.



The Philippines was not spared from the Sudden Acute Respiratory Syndrome (SARS) in 2003. The deadly SARS virus was stopped in its tracks only through intensive case-finding, surveillance, measures of control and unprecedented cooperation among nations and various local and international agencies to stamp it out. While there has been no case of SARS lately, it is not impossible for it to re-emerge, or for another virus to transform itself to a strain more deadly than SARS or the current H5N1 strain of the flu virus.



Chemical, Biological, Radionuclear Emergencies (CBRN)

The development, production and use of chemical and biological weapons (CBW) are prohibited by international treaties to which most WHO member states have subscribed. However, not all states are part of these treaties.

There are also certain armed groups in the Southern Philippines which have been known to have links with the Jemaah Islamiyah (JI) and other international terrorist groups. The potential for these groups to use chemical and biological weapons in their activities is a threat that cannot be dismissed.

Though experts say that the actual risk that CBW will be used by terrorist groups is small, the possible consequences of such use can be catastrophic. The threat of high mortality and morbidity, including the ensuing panic and fear that this will create, obliges governments to seek ways to prevent the use of CBW and to prepare contingency plans for such an eventuality. Deliberate diseases present new challenges both to public health and global and national security.

Among the biological agents identified as possible public health threats are *bacillus anthracis* (anthrax), *variola virus* (smallpox), *yersinia pestis* (plague), *clostridium botulinum* (botulism), *francisella tularensis* (tularemia), and hemorrhagic fever viruses.

The chemical agents include mustard gas and sarin gas, among others.

The threat of radionuclear emergencies as a result of nuclear bombing or accidents involving radionuclear materials is another possible health emergency that must be taken into consideration when planning for disaster preparedness.

It is possible that the occurrence of a terrorist attack using biological and chemical weapons will be apparent only when there is an increase in emergency room consultations pointing to the diseases mentioned. Injuries secondary to an attack using chemical or biological weapons or radionuclear materials will require special skills in diagnosing and treatment of these conditions as well as the necessary supplies and equipment to respond to such emergencies. As such, our local health sector staff must have the said capacity, be able to detect the possible occurrence of the attack, and put into action an emergency plan for such situations.

The Challenge

With the way the world is changing today, together with the consequent health threats that these changes bring, we need to prepare more earnestly for public health emergencies and

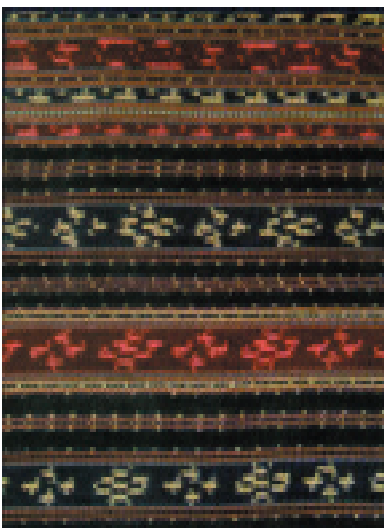
disasters.

While there may be some differences in the way certain emergencies should be managed depending on the nature of the threat, there are basic principles that can be used as a guide for their management. Disaster risk reduction strategies, disaster prevention and response mechanisms, improving preparedness for emergencies through contingency planning—all these need to be in place at the local, regional, national, and even international levels if we are to face these threats head-on.

The World Conference on Disaster Reduction held last 18-22 January 2005 in Kobe, Hyogo, Japan came out with what is now called the ***Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters***. The strategic goals outlined in the framework are “(a) more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction; (b) the development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards; (c) the systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.”

The need for a multi-sectoral approach and cross-boundary cooperation in disaster risk reduction and management cannot be over-emphasized. The field to be covered is much too broad and the amount of resources, both human and material, required for its success is quite considerable to be addressed by a single agency alone: hazard mapping, risk assessments, contingency planning, evacuation camp management, shelter, water and sanitation, nutrition, security, transportation, risk communication, information management, logistics management, health services, legislation, rehabilitation, training, education, research, development planning, etc. The role of the local community in planning for disaster preparedness and response is an essential part of the process and must be emphasized.

For us living in a country along the Pacific Ring of Fire and along the typhoon belt, in this day and age of increased global threats from chemical, biological and nuclear weapons as well as emerging and re-emerging diseases, disaster preparedness must become a part of our lives. Not to work on building our resilience to disasters is simply not an option.



“Understanding GIS in Health Care Services & Disaster Management”



Prof. Vicente V. Calag

Chair, Department of Mathematics, Physics and Computer Science, University of the Philippines in Mindanao

Prof. Calag discussed the following definitions and features of the Geographic Information Systems (GIS):

- “a set of tools for collecting, storing, retrieving at will, transforming and displaying spatial data from the real world for a particular set of purposes” (Burrough, 1986)
- It provides a means of linking databases to maps, creating visual representations of statistical data, and analyzing how location influences features and events on the earth’s surface.
- GIS is capable of presenting and of showing information in layers and of comparing multiple feature layers of information. A user can then analyze the relationship between the layers. (Source: Dr. EC Godilano, DA-BAR)

Prof. Vicente Calag is currently the Chair of the Department of Mathematics, Physics and Computer Science of U.P. in Mindanao College of Science and Mathematics. Working closely with Prof. Fitzgerald, Prof. Calag is the Director of the Geographic Information Laboratory which manages and directs the University’s GIS-related research in collaboration with UMass in Amherst, the Philippine Eagle Foundation, and the Northern Mindanao State Institute of Science and Technology.

A graduate of BS Electronics and Communication Engineering from the Cebu Institute of Technology, Prof. Calag earned a master’s degree in Computer Science from U.P. Los Baños.

- A GIS combines software with hardware and information stored in computer databases to assist a user in solving complex research, planning, and management problems. (Fischer and Nijkamp, 1992)
- It is a “computer-based system that provides four (4) sets of capabilities to handle geo-referenced data: data input, data management (data storage and retrieval), manipulation and analysis, and data output.” (Arnoff, 1989)
- The four (4) GIS components are computer hardware, computer software, data, and people.

Prof. Calag briefly demonstrated how to prepare a simple GIS map and explained the use of a Global Positioning System (GPS) device in preparing a map.

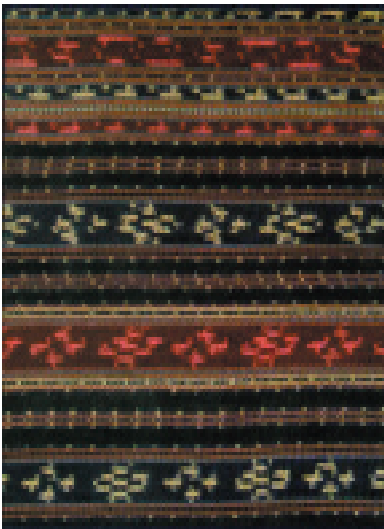
The GIS may be used in the following areas: agriculture/precision farming; environment and natural resources management; urban and regional planning; routing; facilities management; public works and public utilities; transportation and communication; military/defense and security; biodiversity conservation; and, health care and disaster management.

For health, it can be used in the following areas: epidemiology applications; planning of emergency health services; visualization of data (e.g., socio-demographic profile, incidence of TB); spatial analysis; surveillance of diseases; mapping of health services; suitability analysis for new health facilities; identification of geographical distribution and variation of diseases; analysis of spatial and temporal trends; identification of gaps in immunizations; mapping of population at risk and stratification of risk factors; documentation of health care needs of a community and assessment of resource allocations; forecasting of epidemics; planning and targeting interventions; monitoring of diseases and interventions over time; managing of patient care environments, materials, supplies and human resources; monitoring of the utilization of health centers; routing of health workers, equipment, and supplies to service locations; and, locating the nearest health facilities in a disaster area.

Prof. Calag identified the following issues and concerns in the use of GIS: data are hard to find; data formats are not standardized; duplication of efforts, time, and resources; and need for data sharing among agencies.

He then presented a proposal to establish a GIS regional consortium or network called the Mindanao All-purpose Geographic Information Consortium (MAGIC), which aims to (a) share data among its members (b) standardize data format, (c) minimize duplication of efforts, (d) expedite decision-making, (e) accelerate the adoption of the GIS as a tool for decision-making and planning, and, (f) support faster development in the regions.

(Please see **Annex B** for the PowerPoint presentation of Prof. Calag.)

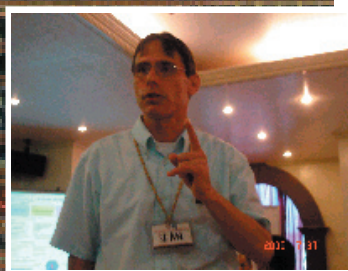




“Assessing Disaster Reduction in Eastern Mindanao & Greater Davao City”

Mr. Sean Michael Fitzgerald

UPMin Visiting Lecturer from the University of Massachusetts in Amherst



Mr. Fitzgerald presented “A Social Sequence Model in Natural Disasters” composed of the following elements: mitigation (planning), preparation (implementation), response (reaction), and recovery (renewal). He likewise talked about temporal factors in and spatial models for natural disasters.

“There is a need for people dealing with disasters to be flexible, open-minded, and to always have the ‘what if’ mentality,” Mr. Fitzgerald said, adding that simplicity is the key and that “there is absolutely no room for non-trained personnel.” He also emphasized

A faculty member of the University of Massachusetts in Amherst, Prof. Fitzgerald is concurrently the Associate Director of the Statistical Atlas of Latin America Cartographic Center, a joint venture of UMass in Amherst and the University of California in Berkeley, and the Operational Consultant of the Eastern Mindanao Conservation Collaborative or EMCC, a collaboration between UMass in Amherst and UPMin. He is involved in several projects that inextricably weave human systems with earth systems, using technology—particularly, the Geographic Information Systems or GIS database—as a tool in disaster monitoring, measuring and management.

A magna cum laude graduate of BA in Liberal Arts, major in Geography, Economics and History from the Westfield State College, Massachusetts, USA, Prof. Fitzgerald earned his master’s of science degree in Geosciences from the University of Massachusetts in Amherst. Sean, as he is fondly called, will very soon be married to a Davaoena.

the need to do worst-case planning (as against last case planning), to understand one's limitations, to prioritize, and to have a "straight line" between resources and needs. These points are elaborated below:

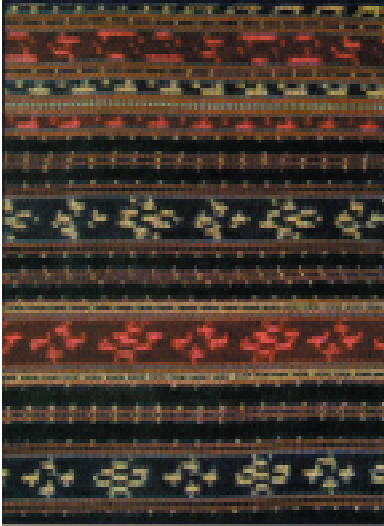
- A society must know its limitations; evaluating "carrying capacity"
- Trying to protect everything often means protecting nothing
- Concentration of protection at areas of highest risk
- What we cannot do: prevent most/all hazards, prevent most infrastructure damage
- What we can do: keep disaster reduction objectives realistic/ doable; minimize casualties and maximize public awareness
- Few disaster plans survive contact with the event; redundancy in planning
- Worst-case planning, not last-case planning; allow for contingencies; Murphy's Law: whatever can go wrong, will go wrong
- One should not increase beyond what is necessary, i.e., the number of entities required to do anything; simplicity saves lives
- Conducting or adapting operations is more difficult when in contact with the event; continuous training and planning
- The closer one gets to a disaster, the more complex it becomes; locate critical nodes outside risk zones, e.g., command, control, and communications
- Objective orientation and seizing the local initiative are critical in the face of uncertainty and chaotic events; too many leaders can leave a system leaderless; control the decision space
- The path from resource to need should be a straight administrative-geographic line

Reduce vulnerability and increase capacity to resist

Mr. Fitzgerald likewise presented various geo-hazards maps of Mindanao showing its trenches, quake epicenters (from 1990 to 2001), seismic profiles, major tectonic boundaries, Agusan-Davao trough, soil profiles (particularly of the Davao region), landslide hazards and vulnerabilities, and the like. In addition, he showed pictures of damaged buildings in Taiwan and Alaska that were caused by an earthquake. He said that Davao shares similar geological features as the affected areas in both countries.

He proposed the following mitigation and response strategies in dealing with earthquakes:

- Zoning: Public Policy Initiatives (e.g., restricted hazard zone development, structural density limitations)
- Building Codes: Architectural Engineering Economic Issues (e.g., property tax revenue/engineering issues, cultural factors in design/cost of "proofing" structure)
- Vulnerable/volatile infrastructure segmentation/integration (e.g., natural gas flow controls / alternative water supply /



waste water disposal, independent communications systems, survivable/redundant response base locations / systems, evacuation route plan and host area preparedness

- Control panic through family, building, sitio-barangay
- earthquake planning; assisting responders in locating missing and potentially injured; assign and train local disaster captains

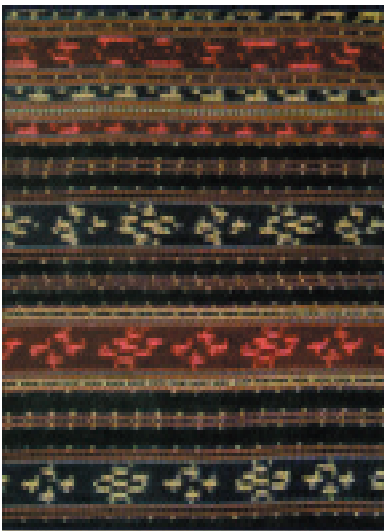
Mr. Fitzgerald also traced the occurrence of landslides to the following factors:

- Hydrological-atmospheric: precipitation, seasonal factors
- Human: Deforestation, inadequate drainage-infrastructure, urbanization
- Hydrological: Surface water-river network, ground water table
- Pedological (soil types): stable / unstable repellant / retentive
- Biomass: root structures, land cover type
- Geomorphology (land form): degree of slope; surficial geology, bedrock geology
- Composites: above factors correspond in time and space to earthquake epicenter zones, volcanic activity zones (lahars), wildfire deforestation, and prolonged severe weather systems.

He presented maps of Davao showing its population profile, potential biohazard-biodisaster areas, command centers, hospitals, built-up areas, roads, rivers, settlements, and major access-egress points.

He pointed out that natural disasters disproportionately affect those persons and families below the mean per capita and median family-household income, i.e., the poor. Hence, the following points should

- be remembered in dealing with health emergencies and disasters:
- Locating higher risk communities, enabling capacity building in mitigation and preparation stages
- Locating barangay income statistics to target aid to those who may need it in the response-recovery stages
- Informality-measurability of economy as factor; availability and accuracy of data as factor
- In the face of uncertainty, tap local religious institutions, NGOs and extended families
- U.S. 1 billion dollars “missing” in “administrative cauldron”; bottom-up direct distribution of financial assistance compared to top-down through administrative hierarchies
- Undelivered materials to target area, roundabout routing of materials and a logistics “tangled web” compared to straight-line distances and distribution





REACTORS

Dr. Paulyn Jean R. Ubial

Regional Director, Department of Health - Region XI

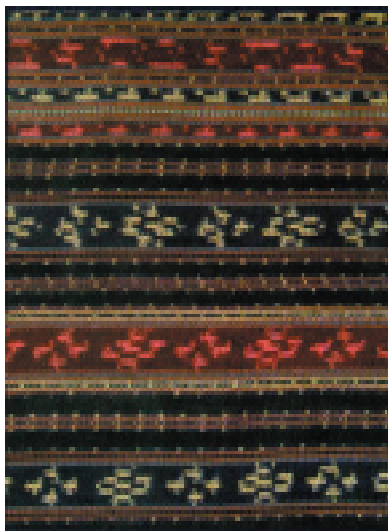


The presentations this morning have been very revealing and shocking to say the least. I would have wanted to stand in front of you and say “We are prepared for all possible health emergencies in this region and in the country”...but I cannot. The Department of Health (DOH) has taken steps and strategic measures to mitigate the risks and hazards for disasters. We have undertaken preparation workshops and planning sessions particularly after the landslide tragedy in Southern Leyte in February this year. But these efforts I believe are not enough...much still needs to be done.

We are not unfamiliar with the situation of the Philippines. In fact, after the Tsunami hit Indonesia on May 27, all the Regional Directors and top management of the DOH were briefed by PhilVocs and other government agencies to prepare for the “BIG ONE.” The possibility of a strong earthquake that can hit major cities in the country (like Metro Manila, Cebu, or Davao) is looming in the horizon. After this briefing in Manila, the Regional Office has been busy planning health emergency preparedness activities, such as the conduct of earthquake and fire drills, planning sessions, scenario-building and table top exercises.

Dr. Ubial has had a long history with the Department of Health as Program Manager of Women’s Health and Development, as Director of the Center for Family and Environmental Health, and as Assistant Regional Director of the Center for Health Development in the Western Visayas. Recently, she was appointed as Regional Director for the Center for Health Development in the Zamboanga Peninsula. Her expertise includes public health and emergency management, epidemiology intelligence surveillance (or EIS), gender and reproductive health.

A graduate of BS Zoology from U.P. Diliman, Dr. Ubial finished her Doctor of Medicine from the University of the East RM. She further took her post-graduate internship at the UP-PGH, and earned her master’s degree in Public Health from U.P. Manila.



As we speak today, the CHD Davao Region is hosting the first Emergency Medical Technicians Training Course in Tagum City at our Regional Hospital there. We have forty-five (45) participants to undertake a twelve-day course, which is the first of its kind here in Mindanao. We know for certain that if an area in Mindanao is hit by a major disaster, we can only rely on the resources in this island for the first two (2) days to make a timely and significant response. We might be isolated from the rest of the country for sometime, and so we must develop our capacities to be self-sufficient in such eventualities. We have scheduled a Public Health Emergency Management for Asia Pacific (PHEMAP) with assistance from the World Health Organization (WHO) in October, again targeting mostly Mindanao participants. Sometime in September, we will attend an International course on “Preparing for Epidemics and Pandemics.” Numerous other capacity building activities for DOH and LGU health workers have been lined up to improve health emergency preparedness of the entire country.

The Center for Health Development, Davao Region (CHD-DR) has prepared its contingency plans for setting up an Operations Center in Tagum City or Digos City in case Davao City and our Regional Office and the Medical Center will be badly damaged. We have established up to the Barangay level an information and early warning system within our network of health workers. It is common knowledge that the DOH has the biggest network as well as the reliable spread of community volunteers in the country who are organized and ready to act at a moment’s notice, to provide information, and to make timely response in any health emergency. We have established the Incident Command System from the national level down to the regional level.

We have in place one of the most developed Post Traumatic Stress and Psychosocial Response to Disasters. We have trained providers on Psychosocial De-briefing in all parts of the country, and we are ready to mobilize them anytime they are needed. In fact, we sent the team to Indonesia in 2005 and, more recently, in May 2006 to help in disaster response.

We are in the process of documenting all health emergencies in the region to ensure a database for planning and response activities. We are tracking all events relating to unusual morbidity and mortality and destruction of health facilities. The most recent health emergency report to this system was the strifing of a Marines outpost in Kapalong and the landslide in Patukan. We know that the system is not perfect; that is why we are amenable to establish the “MAGIC” for GIS emergency information. We have our own use of the GIS, which has been in place with the DOH since 2000 for our Maternal and Infant Mortality Mapping. We also have explored its use in other health information needs, such as the blood supply network, dengue and other outbreak diseases, drug testing laboratories and hospitals. For health facilities, we establish

the spread and distribution of such data so that we can issue the “certification of need.”

We are prepared to network with all of you for health emergency response and preparation. In fact we have a dictum from our Health Secretary that in the face of emergencies...we drop everything and make all the resources of the DOH (human, financial, facilities and equipment) available. Let us work together. Let us prepare. Let us plan. Unfortunately the best way to test our plans would be in the



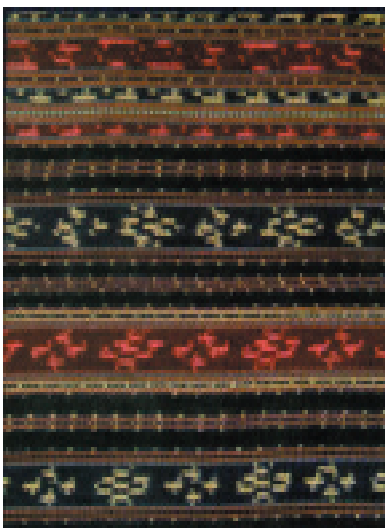
Dr. Rene Elias C. Lopez

City Councilor, Davao City

Good morning!

Allow me to express my gratitude for this opportunity to be part of this round table discussion—and also to Dr. Barrameda for the timely reminder that we are all living in a world that is constantly being threatened by natural and man-made disasters. The various situationers that Dr. Barrameda has succinctly and graphically illustrated to us in a few words remind me that the threats to our health and well-being are always present and that we must always be vigilant and aware of the consequences of our actions to ensure the future of the next generation.

At the outset, the real meat of the presentation rested largely on the challenges spelled out before us. It calls attention to the fact that for us to be spared of these omnipresent health emergencies, we must direct and concentrate all our efforts in reducing and eliminating these threats. And the key is to PLAN AHEAD.



Not many are aware that aside from being a Davao City councilor, Dr. Lopez is actually a general surgeon, and has a master’s degree in Emergency Health Services from the University of Maryland in Baltimore, USA. As such, he has served as medical advisor and internal reviewer of the National Disaster Medical Systems On-Line Training Program of the US Department of Health and Human Services. In the Philippines, Dr. Lopez has worked with the Department of Health Region XI and the Davao Medical Center.

Furthermore, Dr. Lopez has trained in Traditional Medicine and Public Health Emergency Management for Asia and the Pacific with the World Health Organization, as Health Emergencies in Large Populations with various American and international organizations.

Today, as city councilor, he is the Chairman on Information Technology, the Committee on Cooperative Development and People’s Participation and the Committee on Publication. Likewise, he is vice-chair of the City Council’s Committee on Health and serves as medical consultant of the Davao City 911 Emergency Medical Services. Dr. Lopez is also a member of the Davao City Local Health Board.

Government

Governments have a constitutional and moral responsibility to ensure the security of its citizens. The goal is to have safer communities where people can engage in socio-economic and cultural activities that contribute to the progress and development of our communities. Governments seen to be meeting the people's security needs will generate more respect from the people.

In the same light, people expect their governments to identify, regulate, monitor, and control threats to public safety. They also expect their officials to be accountable in implementing public safety measures.

Background

In recent years, we have been made aware of the various threats to the health of our communities caused by both environmental and man-made catastrophic events all over the world, like those mentioned by Dr. Barrameda. Because of our vast experience in health emergencies, there has been a growing trend towards the incorporation of emergency medical services into the overall health care due to the following reasons:

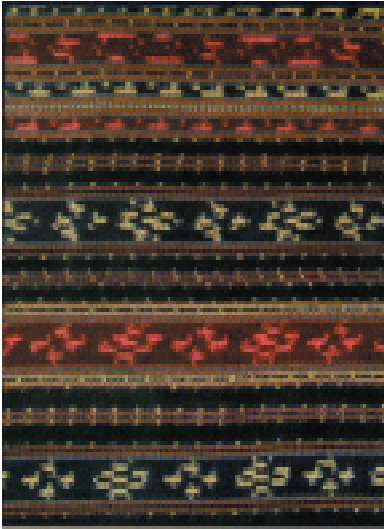
(1) Increase in economic growth which directly affects the health of a nation's people. As a developing country progresses economically, health care services and networks also improve resulting in longer lives and lower morbidity and mortality rates. This has been referred to as an "epidemiological transition."

(2) More and more people tend to live in urban centers. It has been estimated that by 2010, at least 60% of the world's population will be living in urban centers. This urban shift will lead to a demographic transition resulting in increased population densities.

(3) The health care system changes as the demographic and epidemiological transitions take place. The ongoing "epidemiologic transition" that many developing countries are currently experiencing—as characterized by increasing urbanization and centralization of population—could trigger the emergence of new or previously unrecognized health threats that could endanger the survival of our communities.

Risk Management and Vulnerability Assessments

Central to any comprehensive government strategy in any health emergency is the reduction of risk. Thus the emergence of a comprehensive approach known as "Risk Management" has recently gained much attention among our government leaders. The goals of this approach are to ensure public safety and to protect the gains of development by reducing risks. Consonant with these goals is the understanding that once risks are identified, efforts to reduce them will require a mutually agreed upon process that involves a



stakeholders.

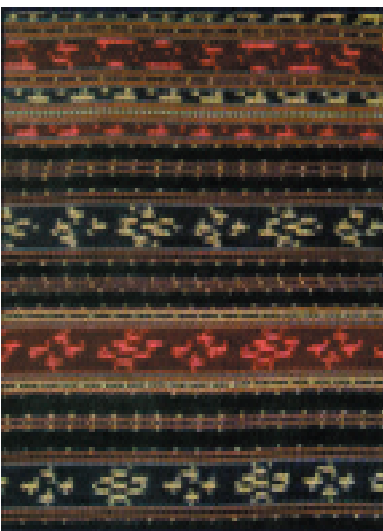
In terms of health emergencies, there is a need to seriously consider the hazards and vulnerabilities of our communities caused by epidemics, disease outbreaks, and traumatic mortalities. We must understand the health status of our communities so that we can adequately assess their vulnerabilities from the dangers of health emergencies.

Impact on Population

Health emergencies are affected by population growth and migration. In the last several decades, the phenomenon called “epidemiological transition among populations” has occurred. This means there is now a noticeable shift in population growth areas, i.e., more and more people gravitate or migrate towards urban centers. This is because urban areas are perceived to offer more opportunities and services than the rural areas.

Davao City, which had a population of 160,000 in 1963, is projected to have a population of 2.3 million by 2021. For the period 1970-1990, the ratio of its urban to rural population had changed from 45.7 to 71.2. This trend has never changed. Up to now, more and more people are migrating to its urban center. Hence, its urban community may become more vulnerable to health and ecological threats than its surrounding rural areas.

As more people congregate, the health dangers of overcrowding and increasing population density per land area are lurking. Coupled with socio-cultural, health, and economic threats (e.g., poverty, sub-optimal living conditions, inaccessible, unavailable, and inadequate health care services), the cauldron of disease outbreaks, epidemics, and other health emergencies are bound to worsen, unless managed properly.



Vulnerable Sectors

Though there is a general perception that disasters and emergencies equally affect all segments of the population, studies have shown this to be a myth. The truth is: there are segments of the population that are more vulnerable than others. These are the infants/children, the elderly, the sick, the infirmed, the handicapped, and the pregnant mothers. Worldwide experience has shown these segments of the population to have suffered a higher degree of impact caused by any health emergency or disaster.

Reducing the Impact

In order to reduce the impact of health emergencies and disasters, we must look at the characteristics of the population, especially

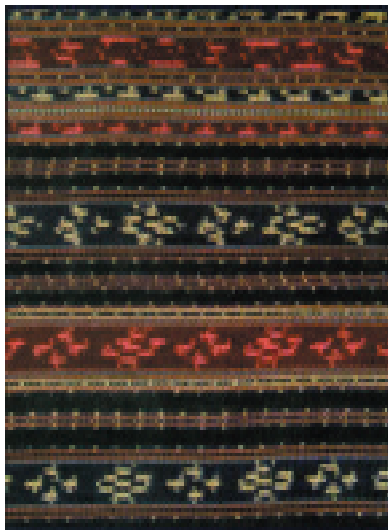
its health status. Davao City is home to about 1.3 million people. It has a density of 385 people per square kilometer, with slightly more males than females. Its average life expectancy is about 62.8 years (or 60.7 years for males and 65.1 years for females).

What are the health threats that Davao City is facing?

In 2003, the number one morbidity among all ages was Acute Upper Respiratory -Tract Infections (URTI). Infectious diseases, such as URTI, pneumonia, diarrhea, tuberculosis, dengue, malaria, and parasitism, still account for most of the leading causes of morbidity in the Davao region. This has been the trend for the past twenty (20) years. The emergence of new strains of infectious agents, such as SARS and Avian Flu, has not yet been considered as a major health threat in the region.

Disaster health plans have been developed by the City Health Office in coordination with the DOH and other health organizations in mapping out various scenarios.

In public health emergencies, we use various health indicators or measures to help us in planning health strategies. We specifically look at the crude birth rates, crude death rates, infant mortality rates, FIC%, maternal mortality rate, and nutrition. Crude birth rates had significantly decreased from 34.71 in 1985 to 29.22 in 1994. Crude death rates had likewise decreased from 6.4 to 4.0 deaths during this period. Infant mortality rate in 1985 was 16.7 deaths per 1000 live births. By 1995, the rate was reduced to 12.1. Maternal mortality rate was 0.87 per 1000 live birth in 1985 but was reduced to 0.67 in 1995. These are general health status indicators that can help us describe and predict the health condition of the general population.



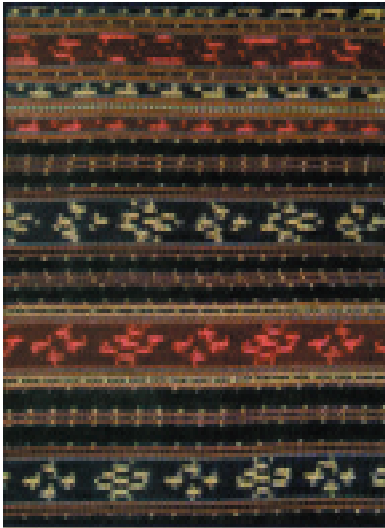
We should consider the vulnerable segments of the population and determine the impacts of health emergencies on them. As an example, in 2003, the percentage of fully immunized children was 84%, with an eligible population of 29,711. This means that 2,953 infants may still be at risk of contracting a disease during health emergencies. Appropriate measures can be implemented by identifying these vulnerable children and by enhancing their immunization status. In terms of nutrition, roughly 6,905 children (or about 3.3% of the total eligible population) are malnourished.

Adequate nutrition programs can be implemented to improve the nutritional status of these identified children.

These data can help us identify and prioritize appropriate

intervention programs/projects for the vulnerable sectors in our society.

This strategy is important, particularly for community leaders and health planners, so that available resources can be properly allocated and distributed. Specifically, budgetary adjustments can be made to target the vulnerable sectors.



In summary, the impact of any health emergency arising from disasters, whether man-made or natural, relies heavily on the general health status and well-being of the community. By identifying and strengthening the most vulnerable segments of the population, the government can adopt effective health strategies, implement appropriate health programs, and allocate more funds for activities that can significantly reduce the morbidity and mortality of the vulnerable sectors.



Engr. Mario Luis Jacinto

Davao City Planning Director

Thank you for inviting me to this forum to give my reactions to the paper presented by Mr. Sean Fitzgerald.

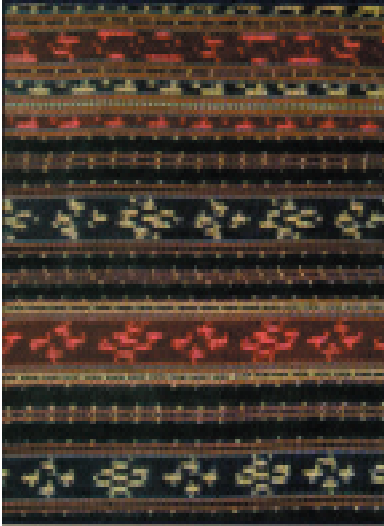
Mr. Fitzgerald presented an excellent and well-researched paper that basically describes the situation of the region with regard to natural disasters. Davao City is indeed vulnerable to natural hazards, be it geologic hazards (earthquakes and accompanying liquefaction and tsunami, landslides, and flooding) or, to a lesser degree, atmospheric hazards (tornadoes, tidal waves, etc.). Although we have one of the best climates in the country, it cannot be denied that we also

Engr. Jacinto is a geologist by profession. After graduating from UP, his work with the Department of Environment and Natural Resources and the Bureau of Mines brought him all over Mindanao, conducting geological mapping and materials exploration projects. An expert in environment and natural resources management, he likewise served as consultant for various firms as well as the World Bank-funded ENR Sectoral Adjustment Program.

Engr. Jacinto has undertaken post-graduate trainings and studies in ENR Management and Mining Management with the Development Academy of the Philippines, UP Los Banos, as well as in Nairobi, Kenya, Washington DC and the People's Republic China.

experience frequent floodings and occasional landslides. The big earthquake may yet be coming, and we really have to prepare for the worst-case scenario.

Awareness is a key factor in hazard management and risk mitigation – awareness not only by the general public, but more importantly, by the policy makers. Planning for risk and disaster management is an essential function of the government, which is why we have different levels of disaster coordinating councils: national, regional, provincial/city/municipal, and barangay.



We at Davao City fully recognize the need for disaster preparedness and we always say that we can never be over-prepared. As a geologist and a practicing development planner, I know that natural disaster mitigation planning should always start with adequate geo-hazard information, which can be generated through direct and indirect mapping. For this reason, the City of Davao undertook a joint project with the MGB entitled “Terrain Analysis of Davao City Watersheds.” The study, which was done for one and a half years, generated the much needed information on the geophysical environment of Davao City and its vicinities. Information generated included the delineation of areas prone to earthquake, floods, landslides, liquefaction, and the like. Conservation and protection areas have also been identified. We have transferred the geological and geo-technical information into planning and development control documents. City Executive Order No. 22 was signed in October 2005 recommending the amendment of the existing Zoning Ordinance and Land Use Plan to ensure the protection of areas identified as conservation, and agro-forestry, non-tillage areas.

Having identified flood- and landslide-prone areas in the city, we have also strictly implemented the ECC requirements in every development project. For land development projects, like subdivisions, the Engineering and Geological Assessment Report has been made a requirement for the issuance of the ECC. In terms of engineering and architectural controls, the City Engineer’s Office is implementing guidelines following the Building Code to mitigate effects of natural hazards on buildings and structures.

The City’s response system to disasters and emergencies has also been institutionalized through the famous 911. We have become the envy of other places because of the efficiency and effectiveness demonstrated by the 911 for disaster and emergency response.

As one author said, a three-pronged approach is necessary to reduce catastrophic life loss, property damage, and the social and economic disruption that natural hazards may cause. First, catalog

and widely disseminate what is already known about hazard mitigation and identify gaps in that knowledge. Second, adapt known mitigation and preparedness techniques. And third, carry out coordinated research and education programs to address the gaps in knowledge and to pioneer improved mitigation practices. In essence, we need to collaborate in pursuit of knowledge and share



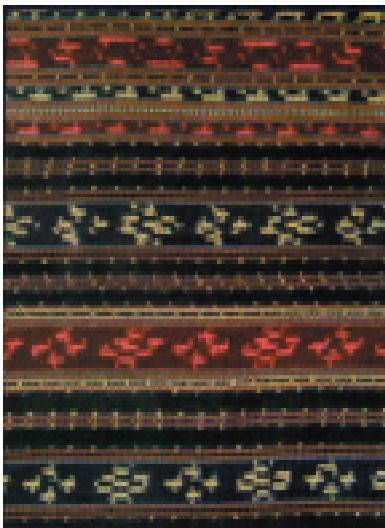
Dr. Teodoro Herbosa

Convenor, Health Emergencies and Disaster Study Group
National Institute of Health, U.P. Manila

Dr. Herbosa observed that most of the maps he downloaded about Mindanao are on conflict-induced displacements of people in the island.

He defined “risk” as the probability that loss will occur as a result of an adverse event ($\text{risk} = \text{hazard} \times \text{vulnerability}$); “hazard” as the potential for a natural or man-made event to occur with negative consequences; and, “vulnerability” as the extent to which a community’s structure, services, or environment is likely to be damaged or disrupted ($\text{vulnerability} = \text{susceptibility} \times \text{resilience}$).

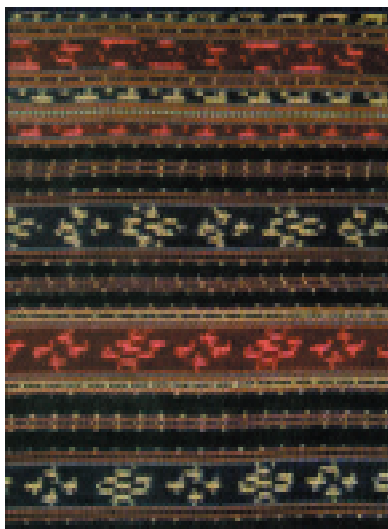
Before adopting western models for disaster preparedness and management, Dr. Herbosa argued that there is a need for us to seriously look into our indigenous systems to determine what Filipino values (e.g., *bayanihan*) we can build on for appropriate disaster response. He illustrated our culture of “*bayanihan*” using



Dr. Herbosa graduated cum laude with a BS Biology degree from U.P. Diliman. After finishing his doctor of medicine in U.P. Manila, he worked as a medical officer for the Armed Forces of the Philippines. Subsequently, after earning his Diplomate in General Surgery from the PGH, he joined the faculty in the newly created Division of Trauma. As a result, he was sent to Tel Aviv to further study and train in emergency and disaster preparedness in the best trauma centers in Israel.

For the past fifteen (15) years, Dr. Herbosa has been actively involved in disaster and emergency medicine, emergency medical services and pre-hospital and trauma care. With a long list of post-doctoral studies, work experiences and trainings at the University of Geneva, Munich and Stuttgart in Germany, Cook County in Chicago, Illinois, the Republic of Palau, as well as with Johns Hopkins University, WHO, Maryland and USAID, to name a few, Dr. Herbosa has been able to set up in the Philippines the most modern pre-hospital EMS system at the PGH, including the training programs for emergency medical technicians. Likewise, he has developed a residency program for Emergency Medicine at the UP-PGH and serves as Chief of the Trauma Section of the Asian Hospital.

Today, Dr. Herbosa is the Chairman of the Department of Emergency Medicine in U.P. Manila. The department is the country’s first university-based academic program in Emergency Medicine. He is an Associate Professor in Surgery at the U.P. College of Medicine, and is also a Fellow



the paintings of Botong Francisco, Joselito Barcelon, and Ed Araquel.

He pointed out that our local term for “community-based emergency preparedness and response” is simply “*bayanihan*.” The other term for it, he said, is “barangay system.”

He then synthesized the presentations of the speakers as follows:

HIGHLIGHTS OF THE PRESENTATION OF THE SPEAKERS:

De Ungria: “...not to sound the alarm bell but to equip the people with appropriate knowledge...”

Montoya: “self-sufficiency in preparedness”

De Las Llagas: “combining Human systems with Earth systems”

Barrameda: “our world is changing”

Mindanao is at risk from all hazards

Communication is key

Evidence-based action

Global partnership

Risk communication strategy

Chemical and biological threats

Information management

Complex emergencies

Building resilience of nations

Development and strengthening at community level

Disaster risk reduction

Culture of safety and resilience at all levels

All actors involved

Calag: Data (store, analyze, display, use)

Structure

Components: hardware, software, use, people

Mapping / GPS

Collaboration and working together

The mathematics of disaster risk management

Fitzgerald: “flexible”

“chaos”

Disaster reduction science

“open mind”

Mitigation, preparation, response, recovery (Disaster Cycle/Social Sequence model)

Psychosocial effects

“no room for non-trained personnel”

Society (people), temporal factors (time), and space (geography)

Understand limitation

Prioritize

Minimize casualties

Maximize public awareness

Last case planning vs. worst case planning

The “what if” mentality

Murphy’s law

Simplicity
Uncertainty principle
Communication is key
Resource and need “straight line”
Increased vulnerability

Dr. Herbosa then emphasized the following points: learning from experiences and mistakes; recording and sharing innovative ideas in solving difficult problems; becoming better after each experience; “*bayanihan*” approach to disasters; and, emergency preparedness and response.

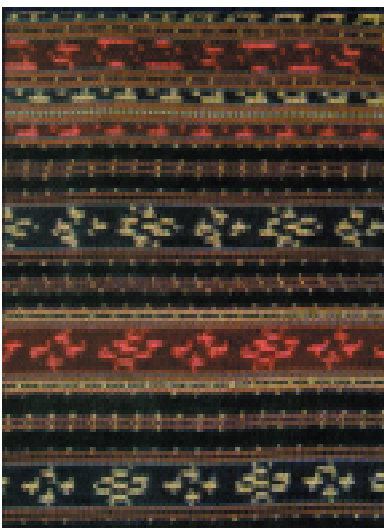
“A coordinated national strategy likely would improve community-based hospital capabilities to meet the challenges of modern chemical emergencies,” he said, quoting Mark Keim, et. al., who wrote the “Special Report: Lack of Hospital Preparedness” that was published in *Prehospital and Disaster Medicine*, vol. 8, no. 3, 2004. The strategy should include:

By Mark Keim, et. al.

Additional E’s by Dr. Ted Herbosa (items 6 to 10)

1. **E****ducation** of hospital administrators and care providers
2. **E****nforcement** of existing HazMat laws and regulations
3. **E****ngineering** controls that facilitate safe and effective hospital-based Hazmat responses
4. **E****conomic** incentives for development of hospital preparedness
5. **E****nhancement** of community coordination, planning, and communication
6. E-technology
7. Ethnic approach
8. Emergency System
9. Evaluation System
10. Empowerment / Enlightened / “*kalinaw!*”

(Please see **Annex D** for the PowerPoint presentation of Dr. Herbosa.)



OPEN FORUM & RESOLUTIONS

facilitated by:



Prof. Maria Araceli Dans Lee

Associate Professor, College of Humanities and Social Sciences, and Chief, Human Resource Development Office, UPMIn

So-Development Office

Mr. Nael Joseph Cruspero

*City Planning and Development Coordinator
General Santos City*

Our disaster management efforts relate to Mt. Matutum and Mt. Parker, which are both located in our area. We experienced a disaster when a wall of Mt. Parker collapsed and caused flashfloods in nearby areas.

We should be prepared for earthquake faults, tsunamis, and flashfloods. We have linked up with the Mines and Geosciences Bureau of the DENR, and we have entered into a Memorandum of Understanding with them.

We believe we should look closely at geo-hazards. Recently in our city, a subdivision developer applied for a subdivision permit. We studied the site closely only to discover that it is beside a river which has a history of flashfloods in the previous years. So we did not issue a permit there.

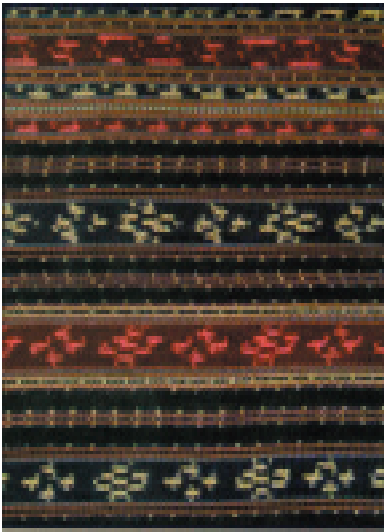
Filipinos usually say “*bahala na*” and ignore threats to their safety. That is the Filipino mentality. The reason the people give is that “we need the sea, we need the river” for economic survival. Indeed, we do need to have some soul-searching.

We should look at the vulnerability maps in our area in Gensan. We in the LGU believe in the GIS technology; in fact, we use it for planning and development. It is a powerful tool that should likewise be adopted by other local government units.

There is a need for us to map out the distribution of our population to see who are vulnerable to hazards and risks. The poor people, who usually live along riverbanks and shorelines, are often overlooked in preparing disaster reduction plans.

We support Prof. Calag's proposal to establish the MAGIC so that GIS data can be effectively shared by its member agencies. We in the LGU hope that we can share in the data from the Department of Health.

Mr. Samaon "Sam" Mundas
*City Market Administrator, and
OIC, City Disaster Coordinating Council
Cotabato City*



Cotabato City is the center of many things. Its population by day is about 200,000, and by night, about 180,000. This is because our city is the government center of the ARMM where many agencies are located. Many employees travel to the city for work every day and go home to suburb areas at night.

The elevation of Cotabato City is below sea level. A fault line also runs through it.

We have major rivers (including the Cotabato Rio Grande and the Liguasan Marsh) running through our city. As a catch basin, the city experiences floods every three (3) months.

We in the City Disaster Coordinating Council plan for earthquakes, floods, armed conflicts, and the like. We have a lot of experience in dealing with these. In the year 2000, we were host to about 10,000 internally displaced people (IDPs) when President Erap declared an all-out war on Camp Abubakar. It was only in the city where there was no firing. People from Matalum, Sultan Kudarat and surrounding municipalities relocated to the city. Five (5) schools accommodated about 10,000 IDPs during this period. We were at the site. Resources from our LGU, from the national government, and from foreign agencies were tapped.

Until now, many of these IDPs still remain in our city. That is also my concern for our public market where many of them have become market vendors. But we have eventually realized that they are actually our strength. At present, many of them trade and sell their goods in our market, thereby perking up our local economy.

Our disaster response system has strong participation from the LGU, the Forum (Federation of Radio Operators), and the Central 911. For transportation support, we have joined Karancho. We have conducted disaster-simulation exercises in which many have joined.

We have observed that for each calamity we have experienced in our city, the NGOs are always there to respond on time.

During the local war, the calamity fund of our city was exhausted. I was a bit saddened that other nearby LGUs did not extend their calamity fund to help us support the IDPs. Nonetheless, I wish to report that cooperation from other Cotabato communities and nearby areas was present as they responded to the disaster in some other ways.

Mr. Diosdado “Dado” Oro
Planning Officer IV
Office of Health Services
Cotabato City

President Erap’s war in the year 2000 triggered the preparation of the city’s Disaster Management Plan.

The Office of Civil Defense XI was instrumental in initiating the assistance of the U.N. High Commissioner for Refugees. We visited Bicol, Pampanga, and Makati City to study their disaster plans.

We had experienced a killer earthquake of intensity eight on 17 August 1976. The incident, which occurred at about 12:45 a.m., killed about 400 people in the city. Had it happened during daytime, the number of casualties would have been more; this is because many school buildings were destroyed by the quake. Luckily, it was nighttime, and the school buildings were empty when it happened. Aside from the death toll, the quake also injured and displaced about 8,000 people in the city.

The lesson we learned during the incident was the value of discipline. The military did everything then. That was because it was martial law when it occurred.

We have one guiding principle for disasters, and that is: attend to your own family first; after that, you can help in disaster control.

We need to build alliances with our neighboring municipalities, like forging of a Memorandum of Understanding with them to effectively deal with evacuation issues. We do have the “*bayanihan*” culture; we just have to enhance this with constant exercise of discipline.

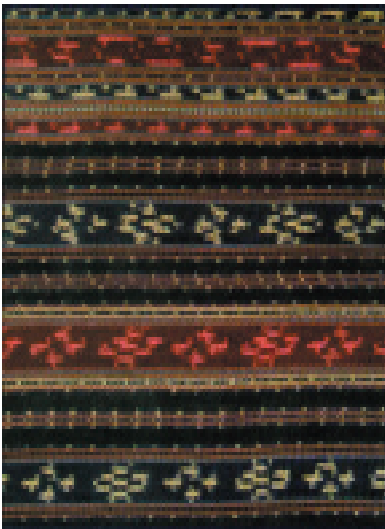
P/Supt. Francisco Villaroman
Chief, Operations and Plans Division
Philippine National Police XI

The PNP has been at the forefront in disaster response in times of calamities, like during the recent flashfloods in Calinan.

We work in tandem with the local government unit during disaster and rescue operations. The LGU usually provides the equipment; while the PNP provides the needed manpower. We can deploy our police anywhere: by land, by sea, or even by air.

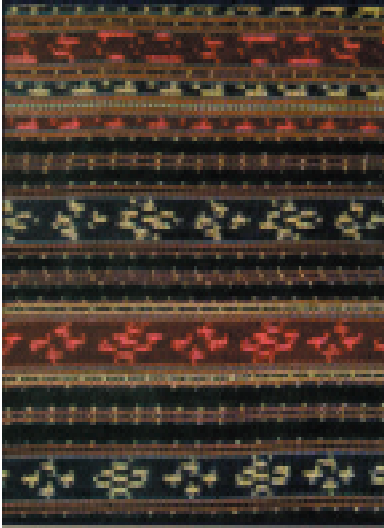
With Central 911 as lead agency, we assist in the evacuation of people in disaster areas. The good thing is that the Central 911 has efficient and effective communication facilities and networks that can be easily tapped during emergencies.

The PNP likewise provides training on disaster preparedness. In fact, we recently conducted one on first aid for Red Cross and barangay health workers.



For man-made disasters, the best strategy is to prevent their occurrence before they even happen. For instance, to effectively address terrorism, the best strategy is “to prevent than to cure.”

The PNP is always ready to provide assistance to any local government unit, business establishment, or community whenever it is needed.



Francisco “Bobby” Ramos Jr.

President

U.P. Alumni Association

Davao Chapter

In Indonesia, an example of a man-made disaster is the forest fire that has burned for months.

The firefighters have tried to extinguish the forest fire. What they have not fully understood, however, is it keeps on burning underground through the stumps that have remained. This is the reason why the forest fire has never stopped.

The burning of forest is itself motivated by the government. There is a strong demand for palm oil worldwide, and the Indonesian government has encouraged the clearing of about two (2) million hectares of forests to convert them into palm oil plantations. China itself is the capitalist of this venture.

What we need to know is the effect of this widespread forest-burning on the climate and ecosystems in Southeast Asia. In the case of migratory birds, for example, their migratory paths have been diverted—and this may be one of the reasons why Avian Flu has become widespread.

Other countries, particularly the ASEAN, must exert influence on Indonesia to stop this practice. They are doing this forest-burning in pursuit of “economic development.” But my question is: what are the costs of this economic pursuit?

Rebecca “Becky” Lopez

Assistant Regional Director

Office of Civil Defense/RDCC XI

I am the representative of Director Lupo of the Office of Civil Defense or OCD.

The OCD is the executive office of the Regional Disaster Coordinating Council XI. This office covers the provinces of Davao del Norte, Davao del Sur, Davao Oriental, Compostela Valley, Digos City, Tagum City, Panabo City, Samal City and Davao City.

The RDCC XI supports the deputized civil disaster management coordinator in the local disaster coordinating council. For Davao City, the deputized disaster management coordinator is Mr. Monsanto. Mayor Duterte chairs the City Disaster Coordinating Council while Mr. Monsanto heads it.

We have a Technical Working Group that serves as the planning team of the RDCC XI.

The RDCC XI includes Mr. Cabanlit of PAGASA.

We have four (4) programs based on the National Disaster Coordinating Council's framework: mitigation, preparedness, response, and recovery.

Our office has piloted a contingency plan (training formulation) with a group of planners in Cotabato City and the ARMM, which includes worst-case scenarios (like internal conflicts in Mindanao). We have defined our counterparts and advocacies, as follows: (1) disaster training; (2) vulnerability; and, (3) introduction of plans and capability building.

The RDCC XI is proposing the setting up of fault-line markers in highly vulnerable communities.

The PAGASA is setting up its own weather GIS.

We have a continuing program with a tag line "Safe Ka Ba?" to help prepare the people for natural calamities, like El Niño and La Niña.

There are loopholes in the communication system in far-flung municipalities but it is being improved. The best and most effective strategy to minimize the effects of disasters is preparedness.

Our challenge to this group is, "What comes after this RTD?"

Prof. Ricardo M. de Ungria

Chancellor

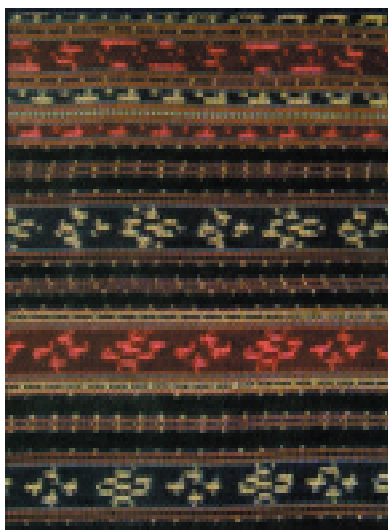
University of the Philippines in Mindanao

We hope to see a comprehensive program for the whole of Mindanao.

We appreciate the inputs that show the strengths and weaknesses of the island. We certainly need the help of the RDCC. We will talk first with them and then reach out to all stakeholders.

We want our intervention programs to trickle down to the level of schoolchildren and local officials.

Perhaps we can organize a bigger meeting with a more comprehensive agenda so that we can interface with key agencies,



institutions, and organizations.

The LGUs may lack the capability to gather facts. We in the academe are in the business of doing research for policy input. The LGUs can define the problems and provide the needed funds for research to be conducted by the academe.

Mr. Sean Fitzgerald

*UPMin Visiting Lecturer from the
University of Massachusetts-Amherst*

We have heard everyone say that we have the commitment. Hence, we should continue networking. A directory of today's participants has been prepared to facilitate this.

We should continue with a smaller working group to discover sub-areas of work.

To take advantage of opportunities, we need to utilize our common assets, including the planning skills of the University.

Dr. Mely Lastimoso

*Medical Officer V
General Santos City*

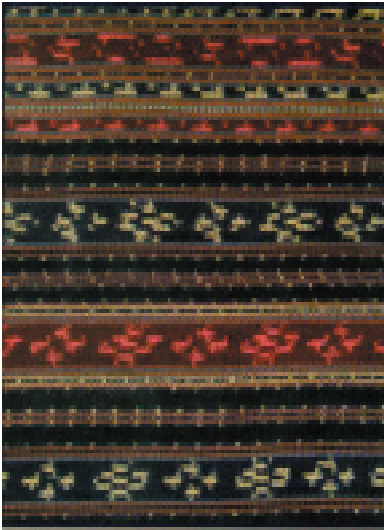
I have attended many gatherings like this in the past where many speakers had excellently talked about various health topics. Sadly, in my nineteen (19) years of medical service in the local communities, I have observed that these talks have not really been translated into concrete programs at the grassroots level. We hope this RTD will not turn out to be another exercise in futility.

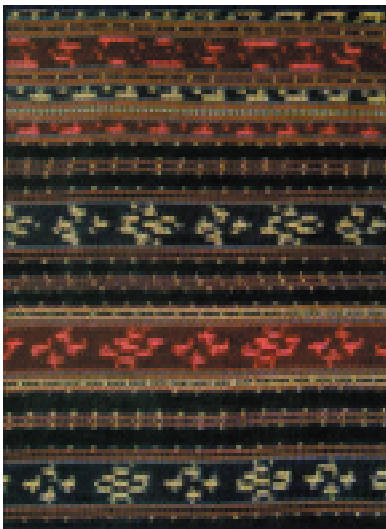
Insufficient funds, lack of local health workers, inadequate medical supplies, and the like still beset us at the community level. We feel that we are often neglected on the ground.

Information dissemination has been lacking at the barangay level because we lack the manpower to do it.

Maybe we can prepare a short video on health emergencies and disasters that can be presented in every barangay.

Some U.P. people did a survey in Gensan once. They presented their findings in Manila without conducting the necessary research validation in the area and without acknowledging the local people who helped them.





Atty. Oliver N. Saniel

Legal Officer

U.P. in Mindanao

Maybe that was a research of the Population Institute about sex and adults done in 1999.

Dr. Mely Lastimoso

Medical Officer V

General Santos City

No, this was earlier. Maybe the research you are referring to is different.

Mr. Danny Guillen

President

U.P. Los Baños Alumni Association

Davao City

In connection with information dissemination and advocacy, I would like to mention the ongoing aerial spraying that is being practised by big plantations here in the city.

We know that aerial spraying has a widespread impact on the surrounding environment that could lead to health disasters in the future.

Maybe we should ask the ABS-CBN and GMA networks to expose the hazards that it poses to our local communities.

RTD Resolution

After the open forum, the group deliberated on the composition of the Steering Committee whose main function is to plan for the conduct of a wider meeting/conference in the future.

The body agreed that the Steering Committee will be composed of the following members:

AGENCIES

UPMin
Team

Ungria

RDCC XI

MEDCo

LGU of Davao City

Department of Health
Pantojan

DOST

Mindanao Emergency
Response Network (MERN)

POINT PERSONS

To be represented by the RTD

headed by Chancellor de

To be represented by Dir. Lupo c/o
Asst. Dir. Rebecca Lopez

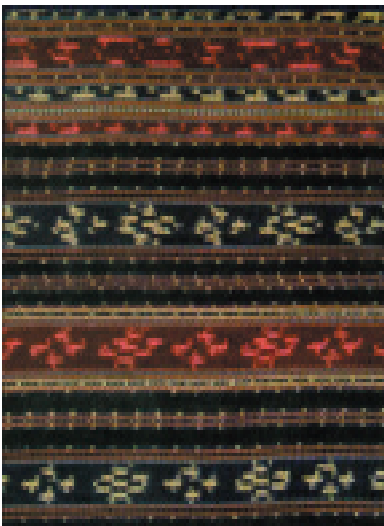
c/o Ms. Yvette Valderia

To be represented by Engr. Luis
Jacinto

To be represented by Dr.
c/o Dr. Paulyn Ubial

To be represented by Dir. Madel
Morados c/o Mr. Anthony Sales

c/o Ms. Yvette Valderia of MEDCo



CLOSING STATEMENT

Dr. Gilda C. Rivero

Vice Chancellor for Academic Affairs, U.P. in Mindanao

Maayong hapon!

The discussion carried on with great enthusiasm and generated a lot of ideas and suggestions. It was a successful endeavor and allow me to congratulate you all for the effervescent participation. Our profound thanks to all of you, participants, for responding to our invitation and for providing this RTD with the useful information, which may now guide us in the needs assessment and prioritization phases.

Congratulations, too, are in order to the organizers and sponsors of this day's event lead by the RTD team, with Chancellor Ricardo M. de Ungria as Project leader, Dr. Lilian A. de las Llagas as Project Coordinator, Prof. Ma. Araceli Dans Lee as RTD Facilitator, and the project assistants together with the support staff.

To Dr. Jaime Montoya, Executive Director of the Philippine Council for Health Research and Development, Department of Science and Technology, and colleague, thank you too, for your support. UPMIn is also grateful to you for bringing into your agenda our concerns pertinent to Health Emergencies and Disaster Preparedness and for thus, firming up the idea of creating a Multi-Agency Task Force/ Network for Mindanao.

Like scouts, we need to always be prepared to enable us to work together to fulfill the objectives of this RTD. We must heed the appeal of Dr. Mely P. Lastimoso, Medical Officer V, City Health Office, General Santos City, for "ground truthing" of information as those from surveys conducted in communities. She is at the grass-roots and is in the best position to offer us priority directions for our action plan since we are up here. The challenge in the context of preparedness is to bridge the gap between us and the community, where the action lies. We must adopt more effective approaches, in order that whatever information we generate will truly percolate down to the community, where it matters. We need to proceed on with a "SMART" plan of action, which would ultimately be socially responsive and sustainable. Programs must be **SIMPLE, MEASURABLE, ATTAINABLE, RELEVANT** and **TIME-BOUND**. Any activity within these first four parameters will be easy to achieve, but any significant and appropriate output loses its value or applicability if this is not delivered within the time frame!

Let's be SMART, then! Such is the challenge for the Multi-Agency Task Force. All my best wishes. May we achieve the peace we all long for through this project.

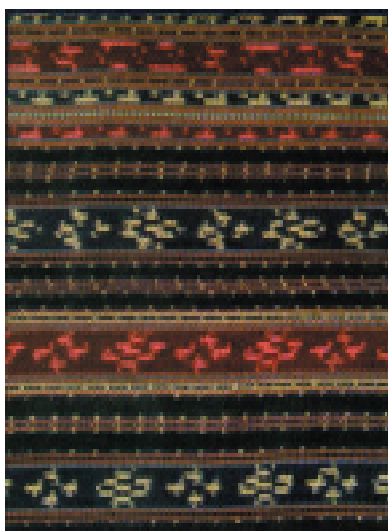
EVALUATION & RECOMMENDATIONS

Summary of Evaluation

Items	YES	NO	No Comment	Total
The event was well-organized.	33	0	0	33
The nature and impact of disasters and health emergencies on human population and the environment were well-discussed.	32	1	0	33
Exchange of ideas and experiences on disaster and health emergencies was fruitful.	31	0	2	33
Opportunities for and specific areas of collaboration were identified.	26	4	3	33
There is a need for further discussions on health disaster emergency management.	32	1	0	33
Mindanao should have provincial centers for health and disaster emergency management.	29	0	3 (1 with no reply)	33

SUGGESTIONS: RTD Content

“Focus on community-based GIS on disaster management; let us
 ● not commit the mistake of a top-down approach. UPMIn is on the right track, but research on a lot of data gap scientific field - hydrology, meteorology, etc. - in Mindanao is the NEED.”



- "A good place to start would be the assessment of capability, efficiency and effectiveness of the Regional Disaster Councils."
- "Advocacy and information dissemination should be based on scientific data and should be separated from emotional inclinations."
- "Data from activities of this nature can help formulate policies that will be helpful to personnel engaged in health emergencies and disasters."
- "Need to involve DOH, Mindanao Health Development Office and the Mindanao Emergencies Response Network (MERN)."
- "Provincial representatives should have been present."
- "Key would be information sharing among all agencies - said information should have a uniform base (like same software) for maximum utilization."

Suggestions for Improvement

- "The impact of disaster and health emergencies on public health and the environment was not well-discussed. This could have been tackled by someone from DOH, Philvocs, Pag-asa and NDCC. Dr. Solidum could have been a good speaker. Copies of the presentations would be appreciated."
- "More time should be given to discussion of issues relating to disasters and emergencies."

General Assessment of RTD

- "Many issues were brought out in such little time."
- "What is our/your initiative is worthy of applause. Congratulations!"
- "Please continue the good work. Kudos to UPMIn on a great idea!"
- "Congratulations!"
- "More power!!"

Future Initiative

- "Another workshop aimed at coming up with a Mindanao-wide collaborative emergency and disaster system may be called. Exchanges of ideas need more time."
- "Follow-through activities and coordination"
- "If an inter-agency task force/working group will be formed, I think it is important to highlight the importance/significance of continuity in terms of participation."
- "A very good meeting as a start-up activity. Hope for a fruitful collaboration."
- "What comes next after this? The door for paving the way to a more comprehensive discussion on this matter. We must come up with a do-able strategy on disaster and emergencies."
- "Let this not be the end."



DIRECTORY OF PARTICIPANTS

Dr. Ababon, Tomas Miguel

Disaster Coordinator
Davao City Health Office
Magallanes St., Davao City
Tel: 082-225-3859
CP: 0920-9507811

Ms. Acac, Rizalene

Reporter, Mindanao Times
P. Reyes St., Davao City
Davao City
Telefax: 082-3000854
CP: 0910-2275071
eize34rpa@yahoo.com

Dr. Arancel, Fitzgerald

Faculty/Action Officer
Institute of Primary Health Care
Davao Medical School Foundation
Medical School Drive, Davao City
Tel: 082-2992480
Fax: 082-2213527
CP: 0926-2625418
fitziebong@yahoo.com

Sr. Insp. Arbutante, Richard

Public Information Officer/
Action Officer
RDCC, Bureau of Fire Protection
Leon Garcia St., Davao City
Tel: 082-304480
Fax: 082-2216658
CP: 0916-5868410
richarbutante@yahoo.com

Mr. Arreza, Edilberto

Officer-in-Charge
Office of the Regional Director
Bureau of Mines and Geosciences
Region XI
Konsuela Bldg., 669 A. Quezon St.,
Davao City
Telefax: 082-2216535
CP: 0917-7198553
ed_arreza@yahoo.com

Mr. Balane, Walter

Reporter, Mindanews
19 Leo corner Venus Sts.
GSIS Village
Matina, Davao City
Telefax: 082-2974360
CP: 0906-2223738
walter@mindanews.com

Dr. Barrameda, Ma. Lourdes

Emergency & Humanitarian Action
Programme Officer
World Health Organization
National Tuberculosis Centre Bldg.
2F Bldg. 9, Department of Health
San Lazaro Hospital Compound
Sta. Cruz, Manila
Tel: 02-5289765
Fax: 02-731-3914
CP: 0916-5632181
barramedal@phl.wpro.who.int

Beliran, Ephraim

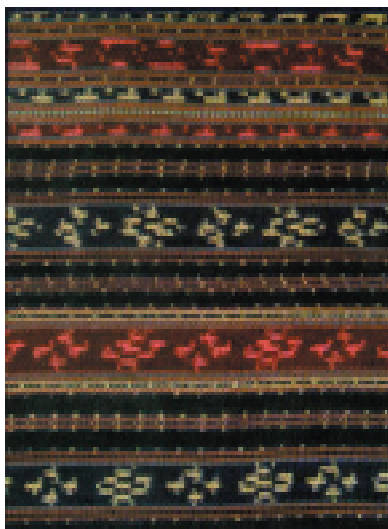
City Disaster Coordinator
City Disaster Coordinating Council
General Santos City
Tel: 083-5523939
Fax: 083-3012929

Ms. Buenaobra, Lynda

Budget Officer III
Budget Office
U.P. in Mindanao
Mintal, Davao City
Telefax: 082-2930259

Ms. Caalaman, Emma Ruth

Budget Officer I
Budget Office
U.P. in Mindanao
Mintal, Davao City
Telefax: 082-2930258



Ms. Cabrera, Bambi
President
All U.P. Workers Union
U.P. in Mindanao
Mintal, Davao City
Telefax: 082-2930201
bambicabrera_ph@yahoo.com

Prof. Calag, Vicente
Chair, Department of Math, Physics
and Computer Science
U.P. in Mindanao
Mintal, Davao City
Tel: 082-2930303
Fax: 082-2930302
CP: 0917-4437731
vcalag@yahoo.com

Capitan, Corazon
Administrative Officer
Catholic Relief Service
Block 37 Lot 5 Luisa St.
Juna Subd., Matina, Davao City
Tel: 082-2992480
Fax: 082-2992969
CP: 0917-7056418
ccapitan@ph.seapro.crs.org

Prof. Cayamanda, Karen Joyce
University Registrar
U.P. in Mindanao
Mintal, Davao City
Telefax: 082-2930201
CP: 0917-7055185
karenjgc_upmin@yahoo.com

Cruspero, Nael Joseph
City Planning and Development
Coordinator
City Planning and Development
Office
3rd Level, City Hall
General Santos City
Tel: 083-5547135
CP: 0919-8769183
njdcruspero@gmail.com
njdcruspero@yahoo.com

Ms. Cruiz, Michelle
Sunshine Media International
Davao City
Tel: 082-2342866/2342967
Fax: 082-2347277
CP: 0928-7062075
mickey_cruiz@yahoo.com

Cruz, Samuel
Assistant for Administration
Davao City Health Office
Magallanes St., Davao City
Tel: 082-2273991
CP: 0918-9080520
docsamcruz@gmail.com

Prof. Dans Lee, Ma. Araceli
Head, Human Resource Develop-
ment Office
U.P. in Mindanao
Mintal, Davao City
Telefax: 082-2930258
madderlee@yahoo.com

Ms. Datoon, Annie
Land Property Mgt. Officer
Office of the Vice Chancellor
for Administration
U.P. in Mindanao
Mintal, Davao City
Telefax: 082-2930258
CP: 0918-9080644
annie_dvo8000@yahoo.com.ph

Ms. Delos Santos, Janice
Sunshine Media International
Davao City
Tel: 082-2342866/2342867
Fax: 082-2347277
dj@yahoo.com

Dr. de las Llagas, Lilian A.

Project Coordinator, RTD/FGD on
Health Emergencies and Disasters
Professor, College of Public Health,
U.P. Manila
Vice Chancellor for Administration,
U.P. in Mindanao
Mintal, Davao City
Telefax: 082-2930258
CP: 0917-8118452
lilyemerine@yahoo.com

Prof. de Ungria, Ricardo

Chancellor
U.P. in Mindanao
Mintal, Tugbok District
Davao City
Telefax: 082-2930310

Ebol, Antonietta

Regional Malaria Coordinator
Department of Health Region XI
J.P. Laurel Ave., Davao City
Tel: 082-3051477
Fax: 082-2213011
CP: 1098-5041329

Engr. Estocado, Cesar

Engineer II
Physical Plant Office
U.P. in Mindanao
Mintal, Davao City
Tel: 082-2930016
Fax: 082-2930258
CP: 09193707105
c_email@yahoo.com

Mr. Estremera, Rene

Public Information Officer
Office of the Chancellor
U.P. in Mindanao
Mintal, Davao City
Telefax: 082-293-0310
CP: 0919-6162664

Prof. Gomez, Aurelia Luzviminda

College Secretary
School of Management
U.P. in Mindanao
Inigo St., Davao City
Tel: 082-2225304
Fax: 082-2270750
CP: 09177043506
twin9512@yahoo.com

Mr. Guillen, Daniel

President, U.P. Los Baños Alumni Association, and

Chair, Kabisig
#3 Champaca Street
Green Meadows
Sto. Niño, Tugbok District
Davao City
Telefax: 082-2930942
CP: 0920-6107060
dcguillen@yahoo.com

Prof. Guillen, Teresita

#3 Champaca Street
Green Meadows
Sto. Niño, Tugbok District
Davao City
Telefax: 082-2930942
CP: 0919-3403068
tessguillen@yahoo.com

Dr. Herbosa, Teodoro

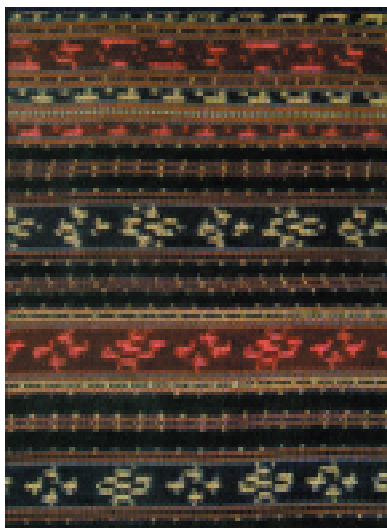
Convenor
Health Emergencies and Disasters Study Group
National Institute of Health
U.P. Manila
Padre Faura St., Manila
Department of Emergency Medicine, PGH, Taft Avenue, Ermita, Manila 1000
Tel: 02-5249966
Fax: 02-5261709
CP: 0917-7936428
therbosa@mail.upm.edu.ph

Herradura, Lorna

Agricultural Center Chief IV
Bureau of Plant Industry
Bago Oshiro, Tugbok District
Davao City
Tel: 082-2930107
Fax: 082-293108
CP: 0917-2424091
lorna_herradura@yahoo.com

Mr. Fitzgerald, Sean

UPMin Visiting Lecturer
from the University of Massachusetts-Amherst
U.P. in Mindanao, Mintal
Tugbok District, Davao City
Telefax: 082-2930302
CP: 0917-6047550
sf@geo.umass.edu



Hilario, Mary Divene
Health Emergency Management
Staff-Nurse
Department of Health XI
J.P. Laurel Ave., Davao City
Tel: 082-3051907
CP:09204133130
mariedivene@yahoo.com

Jabonero, Judith
Regional Supervising Dentist
Department of Education XI
F. Torres St., Davao City
Telefax: 082-2279342
CP: 0928-3503007
judjab_13@yahoo.com

Engr. Jacinto, Mario Luis
Coordinator
City Planning Office
San Pedro St., Davao City
Tel: 082-2220520
Fax: 082-2227667
CP: 0917-7029133
mljjacinto@yahoo.co.uk

Ms. Jacinto, Ma. Luisa
President-Elect
Rotary Club of Waling Waling
53 Platinum Street
Monte Maria Vill II
Catalunan Grande
Davao City
Telefax: 082-2971934
CP: 0917-7010727
maluisajacinto@yahoo.com

**Supt. Kwan Tiu, Wilberto Tico-
nel**
Chief, Bureau of Fire Protection
Alvarez cor. Monteverde Sts.,
Davao City
Tel: 082-3004004
Fax: 082-2216658

Dr. Lastimoso, Mely
Medical Officer V
General Santos City
Tel: 083-3023922
Fax: 083-3023922
CP: 0919-8483116
mely_lastimoso@yahoo.com

Lopez, Rebecca
Assistant Regional Director Office of
Civil Defense/RDCC 11
Camp Catitipan
Buhangin, Davao City
Tel: 082-2332002/2252535
Fax: 082-2330295
CP: 0918-4727665
ocdrc11@pltdtdsl.net

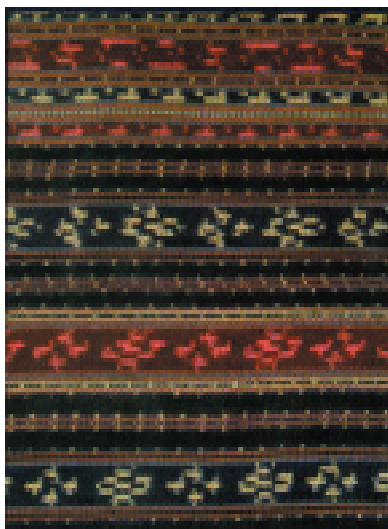
Dr. Lopez, Rene Elias
Vice Chair, Committee on Health,
Davao City Council
San Pedro St., Davao City
Tel: 082-2220855
CP: 0918-9077363
rlopez1@mbc.edu

Magdaguia, Editha
Chapter Administrator- Davao City
Philippine National Red Cross
Roxas Ave., Davao City
Telefax: 082-2240217
CP: 0916-3406943
edith_pnrc@hotmail.com

Arch. Malaque III, Isidoro
OIC, Physical Plant Office
U.P. in Mindanao
Mintal, Davao City
Tel: 082-2930016
Fax: 082-2930258
CP: 0921-2161886
irmalaque@yahoo.com

Mr. Monsanto, Mario Verner
Chief Operating Officer,
Central 911
Executive Officer, Davao City Disaster
Coordinating Council
P. Reyes Street
Davao City
Tel: 082-2251042
CP: 0917-7007706
mvsm06@yahoo.com

Dr. Montoya, Jaime
Director, Philippine Council for Health
Research and Development
Department of Science and Technology, 3/F DOST Main Bldg.
Gen San Avenue
Bicutan, Taguig City
Tel: 02-8372942
Fax: 02-8372924
CP: 0917-5378229
mnty_jm@yahoo.com



Prof. Moran, Antonio
Dean, College of Humanities and
Social Sciences
U.P. in Mindanao
Mintal, Davao City
Tel: 082-2930084
Fax: 082-2930054
CP: 0915-4611242
agmoran_upmin@yahoo.com

Mundas, Samaon
Executive Director
City Disaster Coordinating Council
Cotabato City
Telefax: 064-4218969
CP: 0919-7387770

Prof. Obsioma, Antonio
Dean, College of Science and
Mathematics
U.P. in Mindanao
Mintal, Davao City
Tel: 082-2930303
Fax: 082-2930302
CP: 0918-9192658
obsiomar@yahoo.com

Oro, Diosdado
Planning Officer VI
Office on Health Services
City Hall, Cotabato City
Telefax: 064-4216959
CP: 0927-2162700

Pedrico, Gerry
Chief Meteorological Officer
Philippine Atmospheric Geophysical
and Astronomical Services
Administration Old Airport Compound,
Sasa, Davao City
Telefax: 082-2340890
CP: 0919-3882452

Ramos, Francisco
President, U.P. Alumni Association
– Davao Chapter
c/o U.P. in Mindanao
Iñigo St., Davao City
Telefax: 082-2228297
CP: 0917-4959505
fbrlead@yahoo.com

Dr. Rivero, Gilda
Vice Chancellor for Academic Affairs
U.P. in Mindanao, Mintal
Tugbok District, Davao City
Telefax: 082-2930402

ovcaa_upmin@yahoo.com

Ridao, Manuel
Supervising Administrative Officer
City Planning Office
Cotabato City
Telefax: 064-4218969
CP: 0928-2833546
manuelridao@yahoo.com

Atty. Saniel, Oliver
U.P. in Mindanao, Mintal
Tugbok District, Davao City
Tel: 082-2930069
Fax: 082-2930310
CP: 0919-3430973
onsaniel@hotmail.com

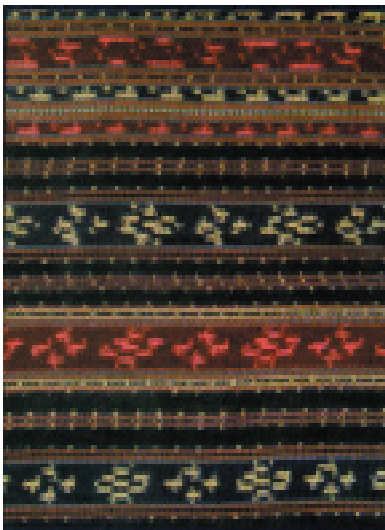
Sales, Anthony
Senior Science Research Specialist
Department of Science and Technology
Davao City
Telefax: 082-2275295
CP: 0915-2330433
philboy682000@yahoo.com

Ms. Suelto, Diana Lhyd
Reporter, Mindanao Daily Mirror
Magsaysay Ave., Davao City
CP: 0918-6640106
dianalhyd@gmail.com

Dr. Ubial, Paulyn
Regional Director
Department of Health Region XI
J.P. Laurel Ave., Davao City
Tel: 082-2215729
Fax: 082-2213021
CP: 0918-9127407
paulyn_u@yahoo.com

Valderia, Yvette
Senior Economic Development
Specialist
Mindanao Economic Development
Council, 4/F SSS Bldg.
J.P. Laurel Ave., Davao City
Tel: 082-2211345
Fax: 082-2218180
info@medco.gov.ph

Mr. Villanueva, Allan
Executive Assistant III
Office of the Chancellor
U.P. in Mindanao, Mintal





THE RTD TEAM

Prof. RICARDO M. DE UNGRIA
Chancellor
Project Leader

Dr. LILIAN A. DE LAS LLAGAS
Vice Chancellor for Administration
Project Coordinator

Prof. MARIA ARACELI DANS LEE
Faculty
RTD Facilitator

Mr. ALLAN VILLANUEVA
Project Assistant

Ms. LYNDA A. BUENAOBRA
RTD Support Staff

Ms. ANNIE DATOON
RTD Support Staff

Ms. CHERRYLYN dL. CABRERA
RTD Support Staff

Mr. SAMUEL V. AUNSO
RTD Support Staff

University of the Philippines in Mindanao
Administration Building, Mintal, Tugbok District
Davao City 8022, Philippines
Telefax (+63-82) 293-0310 ● E-mail: oc@upmin.edu.ph
oc_upmin@yahoo.com ● Website: www.upmin.edu.ph