FINAL WORKSHOP DOCUMENT

WORKSHOP REPORT ON RESEARCH, TRAINING AND KNOWLEDGE MANAGEMENT: Collaboration among Universities and DRM Institutions in Ethiopia

24-26 August 2021, Canopy Hotel, Adama

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TECHNICAL ASSISTANCE TO SUPPORT DECENTRALIZATION OF DISASTER RISK MANAGEMENT IN ETHIOPIA

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Introduction

Knowledge management (KM) is the process of creating, sharing, using and managing the knowledge and information in an organization. It deals with any intentional set of practices and processes designed to optimize the use of knowledge by increasing efficiency in the area of knowledge production, distribution and use.

The National Disaster Risk Management Commission, supported by the Technical Assistance Team of DT Global (European Union funded project), organized a workshop on research, training and knowledge management in collaboration **among Universities and DRM Institutions in Oromia, Amhara, Somali, Sidama and SNNP Region**s in Adama from 24th to 26th August 2021.

The main goal of the workshop was to bring together the universities, the Federal and Regional DRM institutions, the Technical Assistance Team, Development partners and UN agencies in order to build synergy for conducting joint research activities and enhance the capacity of the Federal and Regional DRM Institutions that ensures the sustainability of the EU-DRM Decentralization Project outputs and results. The joint research activities will be planned for the next three years during which new DRM tools, new methodologies, priority areas at national level and other research outputs will be produced based on global standards.

The specific objectives were:

- to identify research topics and priority areas;
- to create awareness on data/ information sharing through NDRMC Knowledge Management portal;
- to mobilize resources to support the joint research activity;
- and to build reach network and team, and action plan for implementation by universities and DRM institutions jointly.

The **main topics** covered during the workshop included:

- The DRM policy and strategy of 2013 and its pillar on capacity building & Knowledge Management
- Identification of the most dominant disasters that affects the country in the next decade
- Current DRM related research activities that are being conducted at various Universities in Ethiopia,
- Identification of new research topics for joint execution between universities, TAT and the DRM institutions
- Resource mobilization and funding of joint research activities between the universities and DRM institutions
- Development of new tools, methodologies and guidelines that will be used in DRM research activities at Federal and Regional levels.
- Identification of priority research areas/ topics, preparation of plan for the next three years and setting up of research teams.

During the first part of the workshop, the participants from universities presented their academic programmes related to DRM, short-term courses, consultancy services, and research interest areas. They also spoke about the manuals, guidelines and other research publications

related to DRM activities, tools for disaster predictions and early warning developed and published by the universities.

During the second part of the workshop, regional governments, academic institutions and International/Local Organizations worked together and prepared a draft of their Knowledge Management Needs and Priority Areas.

The Grant signed by the NDRMC, Oromia and Amhara regions makes provision for research, study, document preparation, publication and dissemination. Therefore, this draft is the starting document plan for DRM institutions and the project managers from the Regions and Federal offices on how to use the allocated funds.

Schedule of Activities

Day one, Tuesday 24/08/2021				
Session -1: Opening of the workshop				
Time	Topics	Presenter	Moderator/ chair	Rapporteur
8:30-10:00am	Registration of the participants		HE. Nesibu Yasin, Deputy Commissioner, NDRMC	TAT
	Welcome remarks and introduction of participants	Abraham Abebe, DRR&R Directorate Director		
	Remarks by EUD Ethiopia			
	Welcoming Remarks	HE. Nesibu Yasin, Deputy Commissioner, NDRMC		
	Key note speech	HE. Mitiku Kassa, The Commissioner, NDRMC		
	General DRM presentation / Knowledge Management	Prof. Borja Santos, International DRMC Consultant, DT Global		
	Group Photo session			
10:00 - 10:30am	**Health Break**			
Session-2: The need for research and capacity building in DRM				
10:30-11:00am	TAT on Knowledge creation and management	Dr. Tesfaye Korme	HE. Nesibu Yasin, Deputy Commissioner, NDRMC	TAT
11:00-11:30am	ADPC/ NDRMC Research Project	Mr. Nazreth Fikru		
11.30–12:00pm	Addis Ababa University (ACDRM)	Dr. Abiy Zegeye		
12:00-12:25pm	Bahir Dar University (Institute of DRM)	Dr. Adane Tesfaye		
12:25-12-45pm	Arba Minch University	Dr. Abera Uncha		
12:45-13:45 pm	**Lunch Break**			
13:45 – 14:15pm	Hawassa University	Mr. Semeredin Yimer	Mr. Abraham Abebe, DRR&R Directorate Director	TAT
14:15-14:45pm	Ambo University	Dr. Terefe Tolossa		
14:45-15:15pm	Jigjiga University	Dr. Muhammed Abdella		
15:15-15:45pm	**Health Break**			
15:45-16:15pm	UN FAO-ET	Dr. Amare Mengiste	Mr. Marko Lesukat, Team Leader, TAT-DT Global	TAT
16:15-16:45	CSM-PSNP	Mr. John Riley		
Day -2, Tuesday 25/05/2021				
Session-3: Identification of joint research and potential collaboration areas between Universities and the DRM Institutions				
8:30-9:30am	NDRMC and AAU (ACDRM)	Mr. Abraham Abebe	Dr. Tesfaye Korma, GIS/MIS, KM Expert/DT Global	TAT
9:30-10:30am	Amhara and Bahir Dar University, Institute of DRMC	Mr. Azmeraw Minlarghe		TAT
10:30-11:00	Health Break			
11:00-12:00	Oromia and Ambo University	Mr. Hailemariam Kejela	Borja, DT Global Consultant	TAT
12:00 – 12:30	SNNPRS/Arba Minch University	Mr. Aklilu Petros		
12:30-13:30	Lunch Break			
13:30-14:30	Somali/ Jigjiga University	Mr. Jamal Sayid	Borja, DT Global Consultant	TAT
14:30 15:30	Sidama/ Hawassa University	Mr. Melesse Alemu		
15.30-16.00	Health Break			
16:00-17:00	Presentation – Synthesis of emergent research, Training and KM issues	Dr. Tesfaye Korme (TAT)	Abraham Abebe, DRR&R Directorate Director	TAT
Day-3: Wednesday 26/05/2021				

Session -4: Break out session for preparation of research and capacity building action plan for next three years				
8:30-10:30	Breakout session - six groups: Refining the topics and areas of research, action plan for the research and identification of budget and other resource needs	Project managers (All Regions) – NDRMC, Sidama, SNNP, Somali, Amhara, Oromia) AAU, NDRMC & TAT	Abraham Abebe, DRR&R Directorate Director	TAT
10:30-11:00	Health Break			
11:00 -12:00	Presentations & panel discussions	AAU, NDRMC & TAT	HE. Nesibu Yasin, Deputy Commissioner, NDRMC	TAT
12:00 -13:00	Presentations & panel discussions	Oromia Region		
	Lunch Break			
14:00-15:00	Presentations & panel discussions	Amhara Region	HE. Nesibu Yasin, Deputy Commissioner, NDRMC	TAT
	Health Break			
15:00-17: 00	Presentations & panel discussions	NDRMC: Sidama, SNNP, Somali	HE. Nesibu Yasin, Deputy Commissioner, NDRMC	TAT
17:--17:30	Closing of the workshop	HE. Nesibu Yasin, Deputy Commissioner, NDRMC		

Presentations

“Opening remarks”, Nesibu Yasin - Deputy Commissioner, NDRMC

MAIN INSIGHTS

- Alignment with the Sendai and EGAD frameworks of DRM
- Alignment with Sustainable Development Goals and the 2030 agenda
- Alignment with all the other policies of Ethiopia in reducing poverty
- The emergency response might save lives but not the sustainability of livelihood developments
- The Ethiopian governments commit to work on risk management along the line of Sendai framework
- The need for science evidence-based decision-making of our response to disaster risks
- The need for accurate knowledge and accountability
- Integration of experts to ensure comprehensive response to disaster risk from scientific perspectives
- The interface between science and practices through need assessments, research to identify the systemic issues making the people vulnerable and the how practitioners make use of the generated knowledge
- The need for capacitating our researchers to have scientific knowledge doing problem solving research in the DRM arena
- DRR and Management requires scientific knowledge that are based on appropriate data generation and management and system building in the area
- The Sendai framework takes into account the knowledge for multi-hazard approaches with classified data
- One of the main challenges is the hardly allocated budgets for DRM related scientific research
- Such workshop will allow to create a smooth relationship between the scientific community and the practitioners

“Keynote speech”, HE. Mitiku Kassa - Commissioner, NDRMC

MAIN INSIGHTS

- There has been increased investment on DRM in Ethiopia over the past many years
- The Ethiopia government has established a framework to ensure alliance with global framework
- Ethiopia has been exposed to a range of disaster risks flood, drought, locust, etc in order to respond to these, the Ethiopian government has established a framework that is people; focused and community based
- This workshop is conducted with financing of the EU which provide investment in DRM on one hand and on the other hand it has a space for research and assessment between academia and the practitioners
- Ethiopia is the first country in Africa to embark on the DRM, wherein knowledge management has been a focus though not properly used
- The COVID-19 has challenged the research and knowledge on DRM
- There was an aspiration to use downscaled climate information
- Knowledge is power
- We are doing this research in DRM in line with the Ethiopian government DRM framework as well as that of the Sandi framework which state the need for knowledge at all levels
- We believe that the findings of this workshop will improve our DRM approaches

EXPECTATIONS

- Collaboration between the universities and the practitioners (WFP, etc)
- Building relationship with the universities and identification of area of collaboration
- Clear identification of training and research to work with partners
- Identification of area of collaboration for universities in regions and on DRM
- How can we become disaster risk managers, evidenced based, knowledge management based
- Identification of bottlenecks and challenges of the Ethiopia DRM to learn the Gap and develop potential research areas
- To learn potential research areas for our university students
- Experience sharing among partners
- Clear identification of research areas
- Clear joint plan development and integration among stakeholders
- Area of cooperation between universities and DRM institutions for possibilities of research
- Identification of potential area of internship for our universities

“Remarks”, Dr. Marko Nesukat – Team Leader TAT, on behalf the European Union Delegation in Ethiopia

MAIN INSIGHTS

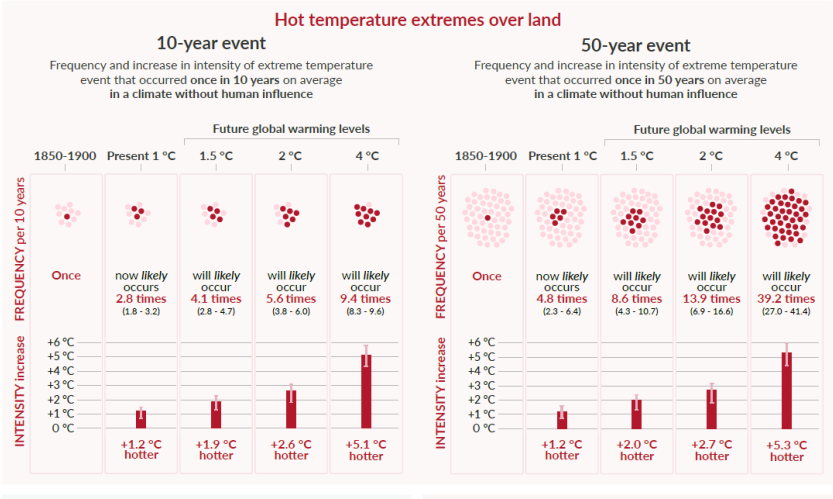
- The importance of bringing together stakeholders around Disaster Risk Management
- The EU has financed more than 200 million Euro
- This project is 25 million Euro for decentralization of DRM
- The workshop is very important as it brings together the academia and practitioners

"General DRM presentation – Knowledge Management", Prof. Borja Santos Porras – International Senior DRM Consultant and professor of practice IE School of Global and Public Affairs, Technical Assistance Team-DT Global

I. CURRENT UPDATES IN CLIMATE CHANGE AND DISASTER RISK MANAGEMENT

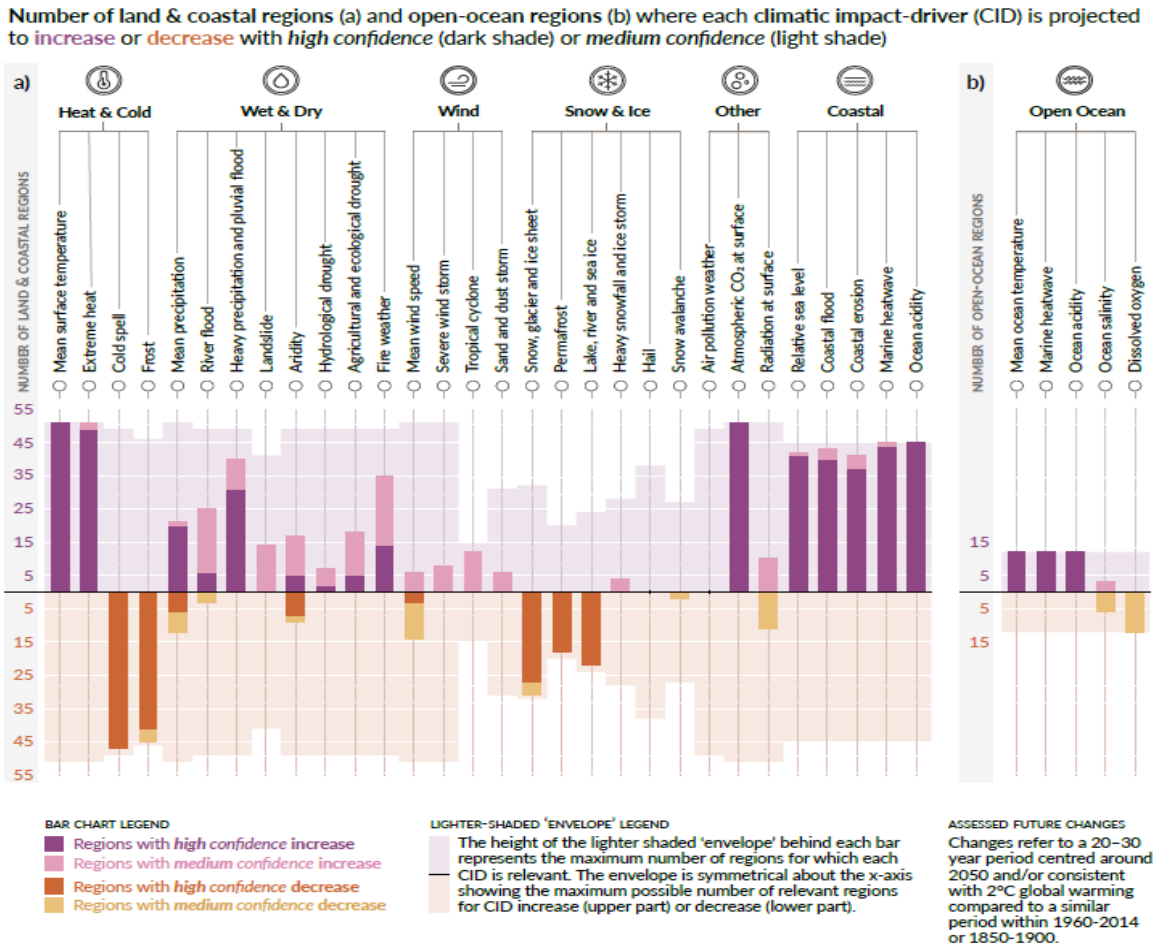
Average global temperature is increasing: Extreme heat waves that were once ridiculously improbable are on their way to becoming more commonplace

- Like so many things, temperature statistics follow a bell curve – mathematicians call these "normal distributions." The most frequent and likely temperatures are near the average, and values farther from the average quickly become much less likely.
- All else being equal, a little bit of warming shifts the bell to the right – toward higher temperatures. Even a shift of just a few degrees makes the unlikely temperatures in the extreme "tail" of the bell happen dramatically more often.
- The stream of broken temperature records in the North American West lately is a great example. Portland hit 116 degrees – 9 degrees above its record before the heat wave. That would be an extreme at the end of the tail. One study determined the heat wave would have been "virtually impossible" without human-caused climate change. Extreme heat waves that were once ridiculously improbable are on their way to becoming more commonplace, and unimaginable events are becoming possible.
- The width of the bell curve is measured by its standard deviation. About two-thirds of all values fall within one standard deviation of the average. Based on historical temperature records, the heat wave in 2003 that killed more than 70,000 people in Europe was five standard deviations above the mean, so it was a 1 in 1 million event.
- Without eliminating emissions from fossil fuels, studies have found that heat like that is likely to happen a few times a decade by the time today's toddlers are retirees.



IPCC 2021 Report: It is unequivocal that **human influence** has warmed the atmosphere, ocean and land. **Widespread and rapid changes** in the atmosphere, ocean, cryosphere and biosphere have occurred.

- The scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are unprecedented over many centuries to many thousands of years.
- Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since AR5.
- Improved knowledge of climate processes, paleoclimate evidence and the response of the climate system to increasing radiative forcing gives a best estimate of equilibrium climate sensitivity of 3°C with a narrower range compared to AR5



Changes in the global climate exacerbate climate extreme hazards and disasters (and amplify the risk of extreme weather disasters)

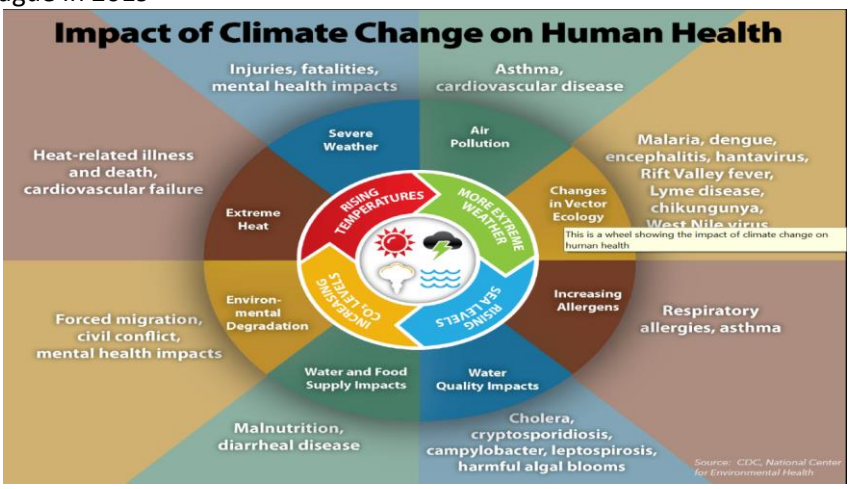
- **Floods:** Cyclone Idai took the lives of more than 1000 people across Zimbabwe, Malawi and Mozambique in Southern Africa, and it devastated millions more who were left destitute without food or basic services. Lethal landslides took homes and destroyed land, crops and infrastructure
- **Heat waves**: 7 warmest years (1880-2020) all occurred since 2014. Heat waves have happened in the Pacific Northwest, Canada and Europe. Fires in Australia killed more than a billion native animals, and some species and ecosystems may never recover.
- **Storms, hurricanes, typhoons and torrential rain causing floods**: Lethal floods in Germany and China. Rising temperatures and warmer seas mean that more water

vapor is evaporating into the atmosphere, providing the 'fuel' for hurricanes, typhoons, and torrential rain. In Asia, in 2020 floods and landslides have forced 12 million people from their homes in India, Nepal and Bangladesh

- **Drought:** El Niño period has taken Central America's Dry Corridor into its 6th year of drought. Guatemala, Honduras, El Salvador and Nicaragua are seeing their typical three-month dry seasons extended to six months or more. Most crops have failed, leaving 3.5 million people, many of whom rely on farming, in need of humanitarian assistance. Higher sea temperatures, linked to climate change, have doubled the likelihood of drought in the Horn of Africa region. Severe droughts in 2011, 2017 and 2019 have repeatedly wiped out crops and livestock

Health Diseases

- Climate Change is altering the transmission of vector-borne diseases (VBDs)
- Climate change may cause an additional 60,000 malaria deaths between 2030 and 2050 (World Health Organization estimation)
- Bird flu, cholera, Ebola, plague and tuberculosis are just a few of the diseases likely to spread (Wildlife Conservation Society).
- E.g. Two tropical cyclones in the Arabian Peninsula created favorable conditions for desert locust swarms in 2018; swarms went undetected until they had already become a plague in 2019



Displacement

- In 2020, more people displaced by extreme climate than conflict. A record 55 million people had been forced to move within their countries due to extreme weather events
- The number of new people forced to move within their own countries by climate disasters rose to the highest in at least a decade in 2020, more than three times those displaced due to conflict and violence.
- Displacement breakdown by disasters was three times higher than conflict in 2020. Most of displacements (88.9%) were caused by weather related events - 'Global Report on Internal Displacement' (IDMC, 2021) –

II. IMPORTANCE OF RESEARCH, INFORMATION AND KNOWLEDGE MANAGEMENT

Sendai Framework for DRR (2015-2030): Priority 1: Understanding disaster risk

- Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment.
- Such knowledge can be leveraged for the purpose of pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters.
- National and local levels

HOW?

1. To promote the **collection, analysis, management** and use of relevant data and practical information and ensure **its dissemination**
2. To encourage the use of and strengthening of **baselines** and periodically **assess disaster risks,** vulnerability, capacity, exposure, hazard characteristics
3. To develop, periodically update and disseminate, as appropriate, **location-based disaster risk information**, including risk maps, to decision makers
4. To systematically evaluate, record, share and publicly account for **disaster losses and understand the impacts**
5. To make non-sensitive hazard-exposure, vulnerability, risk, disaster and **loss-disaggregated information freely available**
6. To promote **real-time access to reliable data (GIS**) and use information and communications technology innovations to enhance measurement tools
7. To build the **knowledge of government officials** at all levels, civil society, communities and volunteers, as well as the private sector (sharing experiences, , lessons learned, good practices and training and education)
8. To promote and improve **dialogue and cooperation** among scientific and technological communities to facilitate a science-policy interface
9. To ensure the use **of traditional, indigenous and local knowledge** and practices, , to complement scientific knowledge
10. To strengthen **technical and scientific capacity**
11. To promote **investments in innovation and technology development** in long-term, , multi-hazard and solution-driven research
12. To promote the incorporation of disaster risk knowledge, in **formal and non-formal education**
13. To promote national strategies to strengthen **public education and awareness on DRM**
14. To enhance **collaboration among people at the local level** to disseminate disaster risk information through the involvement of community-based organizations and non-governmental organizations

Goals & Priority Areas of Agenda 2063

1) A Prosperous Africa, based on Inclusive Growth and Sustainable Development
   (7) Environmentally sustainable and climate resilient economies and communities
   - Climate resilience and natural disasters preparedness and prevention

Example: 1planet4all

- **<u>What is 1planetforall?:</u>** 1Planet4All is a pan-European project that seeks to **bring together visionary young Europeans** in the fight against the climate emergency.
- **<u>Goal:</u>** By 2023, we want to raise awareness among over **8.5 million young Europeans between the ages of 15 to 35 about the challenge** of the climate emergency and its impact on Global South countries.

1planetforall – Activities at IE University

Academic programs, Training Seminars, workshops	Research thesis & tools development	Student community activities	Research and communication portal
• **Undegraduate degrees**: Applied environmental sciences & Climate Change • **Transversal:** Climate Change & Sustainability courses in all degrees • **Specific seminars:** "Fighting CC through advocacy"; "Managing Humanitarian Crisis"; "Public speaking for CC"	• **Capstones**: Thesis/Research done by students for a DRM Client • **Toolkit:** Climate Activism toolkit • **Summer Research Programs & Labs:** Groups of students working on research topics • **Research incentives for faculty research**: Awards, competitions	• **Student Conferences**: Different topics related • **Campaigns & Events:** Create Awareness • **Career fairs:** Jobs opportunities • **Field visits**: Trips, organizational visits, etc.	• **Portal**: Collaboration with media • **OP-Eds & articles:** Dissemination • **Professional conferences:** Groups

Source: Borja Santos (IE University)

III. HOW TO IMPLEMENT AN EFFECTIVE "RESEARCH, TRAINING AND KNOWLEDGE MANAGEMENT"

Some References: "Information, Research and Knowledge Management"

- "Information and Knowledge Management for Disaster Risk Reduction (IKM4DRR) Framework and Scorecard", UNISDR, 2013
- "Information and Knowledge Management, KEY PRACTICES for DRR Implementers", COOPI, 2014
- "Knowledge Sharing Framework for Disaster Management", Yunis Ali Ahmed 1. Mohammad Nazir Ahmad 2. Nor Hidayati Zakaria, Faculty of Computing, Universiti Teknologi Malaysia, 2015
- "KNOW4DRR Decision making in disaster risk reduction across different levels", UNISDR, 2014
- "Sudan's approach to knowledge management in disaster management", Mohamed Abdalla Elamein Boshara, 2015
- The Four Pillars of Knowledge Management (Stankosky et al., 2003)

How to implement an effective KM

- Technically correct
- Administratively implementable
- Politically supportable

We need to:

- Identify better what is the work at the center
- Understand each other interest, expectations, gains & losses, working cultures
- Building trust, harmonization and work togehter – Build alliances
- Leave aside egos, loyalties, mistrust,…

"EU-DDRM Research, Training and Knowledge Management Activities", Dr. Tesfaye Korne, Technical Assistance Team, DT Global

I. Result Area and Activities related to Research, Training and KM

Result area 4, Activity 2.3: IMPROVEMENT OF KNOWLEDGE MANAGEMENT:

- Applied research and development efforts play key roles in overcoming the recurrent incidences of natural disasters and food insecurity in Ethiopia.
- Research institutions in Ethiopia had been publishing very important findings and observation in peer reviewed journals and books at least during the last seventy or more years

.

So, where is that Knowledge?

- Ethiopia has been exposed to numerous natural disasters like; drought, flooding, forest fires, severe wind, volcanic eruptions, diseases outbreaks and landslide and man-made disasters like conflicts.
- Vulnerabilities to hazards and the associated impacts of climate change are partly associated with inadequate early warning systems, inadequate emergency preparedness and response.
- The DRM Policy and Strategy is intended to respond to the multi-faceted nature of disaster issues in the country and is therefore firmly anchored to the principle of a multi-hazard and multi-sectoral approach to disaster risk management.
- Capacity building is one of the pillars in the policy for ensuring the sustainability of services and products.
- Therefore, several training and knowledge creation activities have been planned for implementation through the EU-DRM Decentralization Project.

II. Research Needs identified in the workshop:

Undertaking collaborative research with Universities and other research institutions leads to development of efficient and effective tools for DRM activities.

- New disasters are emerging
- Frequency and intensity are increasing
- New agro-ecological zones are being affected
- Etc …

The major natural disasters frequently occurring in the Region

- Hydro-meteorological (flooding, drought, storm, etc.),
- Biological (locust, epidemic and pandemic diseases, invasive plant species etc.) and
- Geological (earthquake, landslide, volcanic eruption, etc.).

Currently, the Major Natural Disasters Frequently Affecting the Region are the following: (Ref. GARNET-E)

- Droughts
- Flooding
- Landslides
- Fire
- Volcanic Hazards
- Epidemic Diseases
- Land Degradation

Disaster Early Warning is one of the areas that requires advanced research. National to local disaster risk reduction plans, legislation and coordination mechanisms are critical to ensure emergency planning and response involving 4 technical components

A. Drought:

- Using the existing technologies and skills, it is possible to predict drought with lead time from weeks to seasons that may last up to four months.
- The key variables that need to be indicated in the prediction of drought are:
    - The timing (when),
    - The geographical area (where) and
    - Intensity and duration of the drought
- The indicators to be monitored are:
    - Precipitation,
    - Groundwater and reservoir levels and
    - Soil moisture.
- The monitoring and prediction is done both from satellite and ground station observations.
- Over 200 types of models:
    - Normalized Difference Vegetation Index (NDVI)
    - Water Requirement Satisfaction Index (WRSI)
    - Standard Precipitation Index(SPI)
    - Aridity index(AI)

B. Flooding:

- Flooding is the second major disaster in the region.

- The predictability lead time of flooding varies from minutes (flash floods) to weeks (stream floods)
- The key variables that need to be indicated in the prediction of flooding are:
    - The timing (when),
    - The geographical area (where) and
    - Water level, and velocity.
- The indicators that are monitored for flood prediction are:
    - Precipitation,
    - Soil moisture,
    - River gauge level
- All of these indicators are monitored both from satellite and ground observations

C. Landslides/ Mud flow/ Rock fall

- Stereoscopic satellite images provide DEM and land cover, which are required for for landslide vulnerability assessment and monitoring.
- Several historical landslide scars were mapped from Landsat Images in Kenya and Ethiopia
- Examples: Western Kenya, Ethiopia, Malawi

D. Fire

- Multi-temporal infrared satellite data provides very important information in forest fire detection.
- In Africa every year thousands of hectares of tropical forest and scrub are consumed by fire
- The frequency of occurrence of forest fire has increased due to the overall increase in temperature and aridity
- Examples: Congo, Kenya, Ethiopia, Angola, South Sudan

E. Volcanic hazards

- High resolution satellite data has been used in the assessment of the extend and impact of volcanic activities

F. Land Degradation Assessment

- Land Degradation assessment Index = Natural/Biolog. Factors + Physical Factors + Socioeconomic Factors

G. Rift Valley Fever Outbreak Prediction

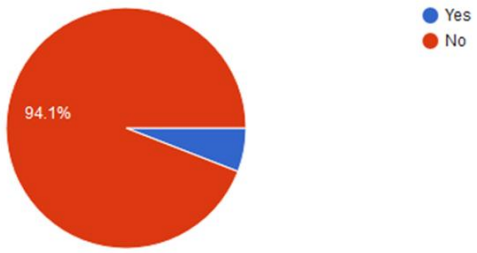
- Livestock and human disease transmitted by mosquito)
- Uses NDVI, Precipitation and Temperature information
- Sensors: MODIS and AVHRR

Challenges of EWS in the Region

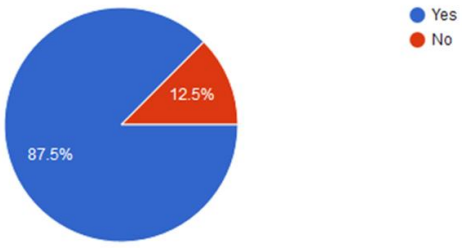
- Most of the EWS in the GHA (and Africa in general) are project based – thus have a limited lifespan
- Inadequate / inaccurate data especially in-situ (rainfall data, crop yield estimates, crop areas, etc) to complement and validate Remote Sensing data
- Lack of adequate capacity (human, infrastructural, institutional)
- Lack of timely access to up-to-date data and information.
- Need for promoting further Research and Development in EWS.
- Need for awareness creation among decision makers.
- Need to begin focusing more on long-term EWS

III. Training Needs

- Training need analysis has been conducted to identify the most demanded short-term courses
- The Assessment was done using online Google Survey form
- The Questions and the responses are:
- Does your Directorate/Unit gets regular (annual) short-term professional skill enhancement trainings?



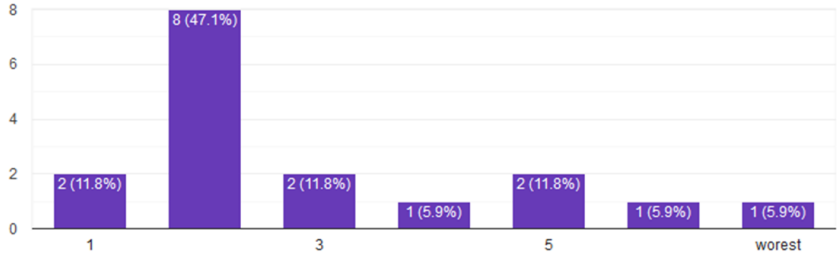
- Are there new areas, methods, tools or technologies on which you may require basic trainings before starting using them?



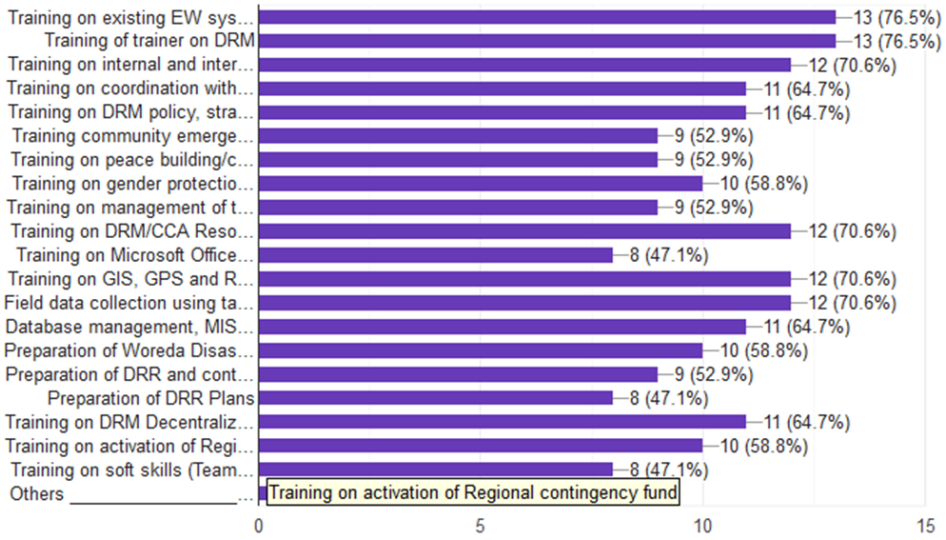
- List the main types of the new technologies, tools and methods for which you must get training.
    - GIS Software,
    - SPPS,
    - Kobo toolbox for Data Collection,
    - ODK, Smart Epi info etc
    - Early warning Data Analysis techniques for Disaster risk response and preparedness
    - Disaster Contingency Planning methods and techniques

- Use and Application of GIS/GPS technology for Disaster Early Warning, Preparedness and Response
- Geo-database system, Remote Sensing, GPS and MIS
- Database management system using SQL or other technologies
- Flood disaster mapping,
- Report writing and data management
- Different Data analysis Methodologies Data collection and Assessment protocol DRR planning and WDRP Data collection
- Hazard identification and mapping, Remote sensing based early warning, identify prevention and mitigation measures,
- Use of drone camera during flood (using drone training)

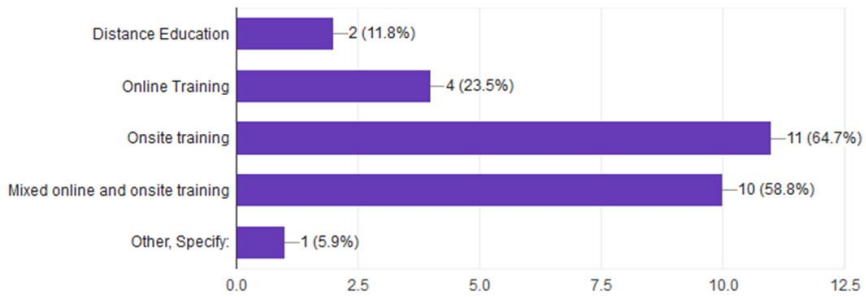
- How confident are you that the existing capacity building effort will meet your future training/professional development needs and aspirations?



- Thinking about cross-cutting topics/issues within the context of future training. Please identify from the list below the training that you feel would be most beneficial to your wider professional skill enhancement.



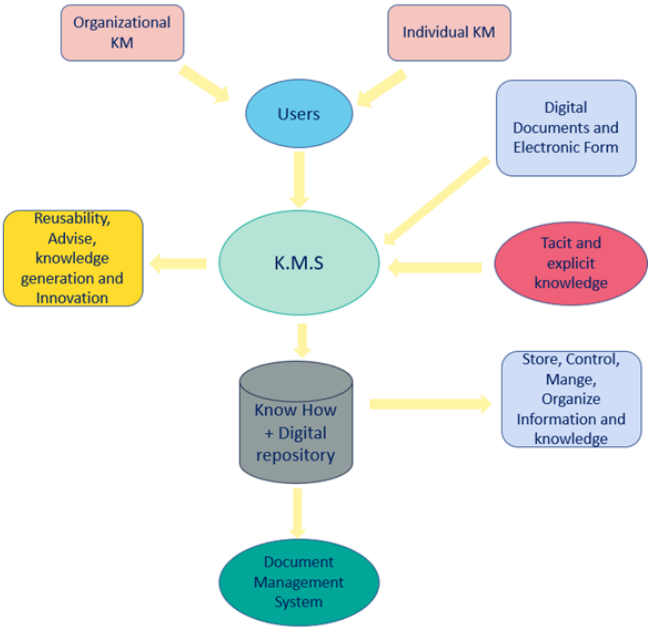
- Which mode of training delivery you would prefer for the short-term courses?



IV. Knowledge Management (KM)

- Is the process of creating, sharing, using and managing the knowledge and information in an organization.
- Includes set of practices and processes designed to optimize the production, distribution and use of Knowledge.
- The Role of EU-DDRM Project in KM Activities:
    - Enhance the culture of Knowledge sharing, using MIS as a support tool.
    - Promote and support the establishment of operational and efficient knowledge management system.
    - Enhance the capacity of institutions that produce knowledge such as the academia (ACDRM, Bahir Dar University), think tanks or research centers.
- Ease access to knowledge through the establishment of knowledge repositories and database.
- Acquire research papers, publications and scientific reports and make them available to users in the arena of DRM in Ethiopia.
- TAT will improve the knowledge management services through revitalization of existing infrastructure and institutional setups and providing short training on knowledge management systems.
- Continuous updating of information and data will be ensured using information management portals that are interconnected at different administrative levels.
- Libraries, IT centres and document registries will be interconnected using a local area network (LAN) so that they can facilitate smoother exchange of information among users.

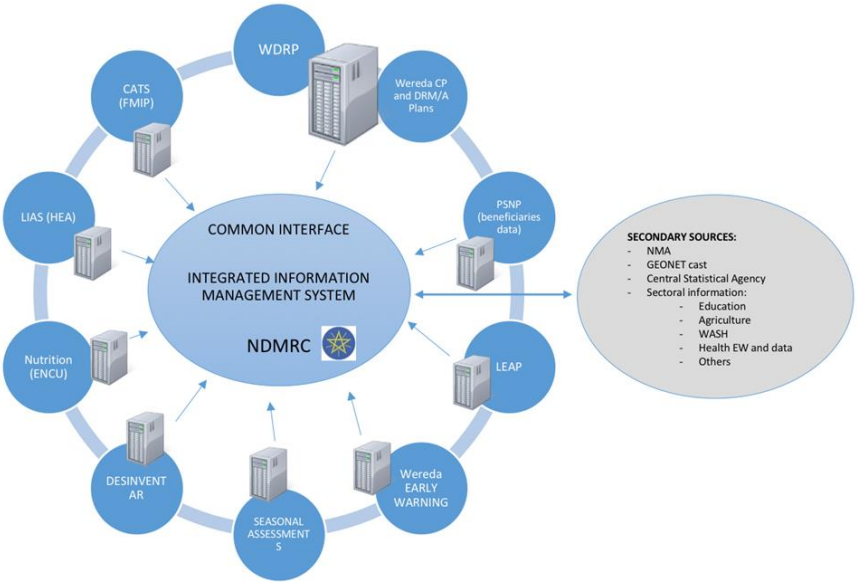
Proposed Knowledge Management Framework ("Knowledge Portal")


Organizational KM
Individual KM
Users
Digital Documents and Electronic Form
Reusability, Advise, knowledge generation and Innovation
K.M.S
Tacit and explicit knowledge
Know How + Digital repository
Store, Control, Mange, Organize Information and knowledge
Document Management System

Harmonization of IT systems and MIS

- Harmonization of the IT systems will simplify interoperability and peer to peer link among the information systems in the DRM implementation communities in Ethiopia.
- It will enhance the establishment of well integrated Information Management System at NDRMC that will also be interconnected with the Regional DRM Institutions.
- The IT interface will take into consideration:
    - The community disaster risk identification
    - The Woreda DRR planning including community contingency plan (CCP)
    - The Woreda Disaster Risk profile (WDRP)
    - A single EWS compatible for natural disasters and food security crisis
    - The process of flow to enable an effective use of the Contingency Fund CF)

Potential Integrated Informational Management System



DRM Information Storage

- Data collected by the different DRM actors in Ethiopia are archived using different data storing technology. E.g. NDRMC use MySQL database
- A simplified IT interface is required for visualization and access to information at all levels despite the challenges posed by low internet band-width.
- A user friendly MIS will be proposed and put in place to access the harmonized information from different sources.

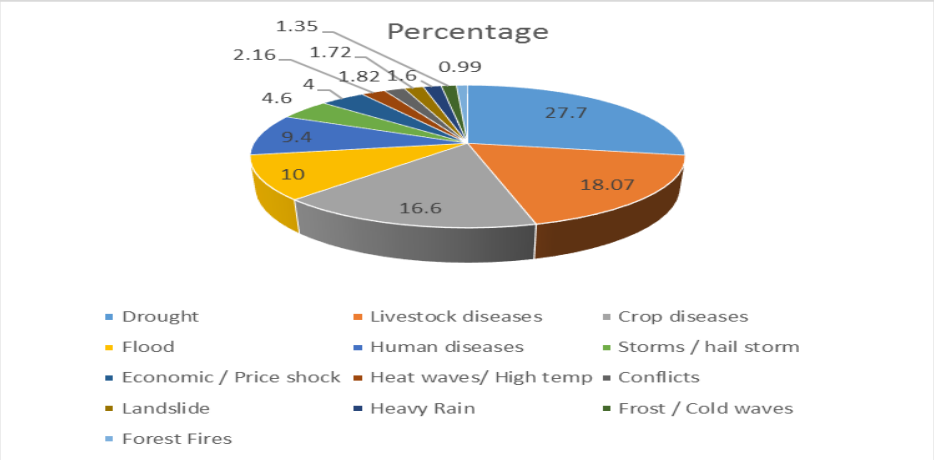
Current Status of KM and MIS at the NDRMC

- The KM tool (OpenKM) has been identified, tested and installed on servers
- Data is being populated and classified based on types
- User manuals are under development
- The MIS system that integrate the automation of WDRP preparation has been under development
- Automated data collection tool (Survey Solution) using tablet has been identified
- Testing and calibration of the tool is now taking place before deployment
- Initial training was provided to DRR experts

"EU-DDRM Knowledge Management Challenges and Gaps Identified by DRM Institutions - Regarding Research & Knowledge Management", Ayatam Fentahun, National Project Manager (EU-DDRM Project)

I. DISASTER OVERVIEW IN ETHIOPIA

Disaster Risks Prevalence in Ethiopia



DRM Paradigm Shift

- Paradigm Shifts in Understanding Disaster
  - Natural science approach (Acts of God) to Holistic approach (considers hazards, vulnerabilities and capacities)
  - Natural hazards only result in a disaster if they coincide with vulnerable conditions.
- Paradigm Shifts in Managing Disaster Risk. Shifts from:
  - Disaster management to Disaster risk Reduction
  - Single hazard approach to Multi hazard approach
  - Single sector to multi sector concern
  - Resource centralization to decentralization
  - Top-down approach to bottom-up approach
  - Ad-hoc response to EW and Assessment based response

II. CURRENT PRACTICES

A. EU-Funded SDDRM In Ethiopia

Grants (3 signed)	Contract amounts	Status
Amhara region	€ 4,825,000	II. Three grants contracts signed III. Over 13 staff recruited IV. Process to finalise procurement

Oromia region	€ 6,755,000	V. DRR activities and contingency fund are under implementation in five regions
NDRMC for	€ 9.1milliion	
(Somali & SNNPR / Sidama regions)	Plus €420,000 for Cars/motorbikes	
Technical Assistance	€2.5million	
	TOTAL: 23.6million	

Result 1: The capacities of regional and local (Woreda) administrations have been strengthened to improve Disaster Risk Management

- Over 300 Woreda will be supported
- Support to Woreda Contingency Planning; Woreda Disaster Profiling and DRR Management action plans
- Harmonize early warning systems
- Trigger interventions for early response (including conflict assessment and resolution)
- Trainings on DRR (community, Woreda, zone and regions)

Result 2: Effective DRR Regional Contingency Fund (DRR-CF) are in place to reinforce preparedness and early response

- Strengthening Contingency planning and activation of funds for early action
- Implementation of targeted DRR plans
- Preparedness and early response actions during crises
- Developing policy and legal framework

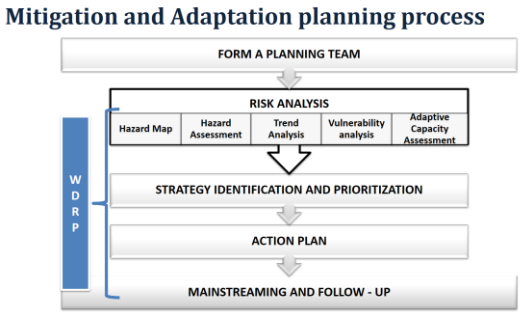
B. Wereda Disaster Risk Profile

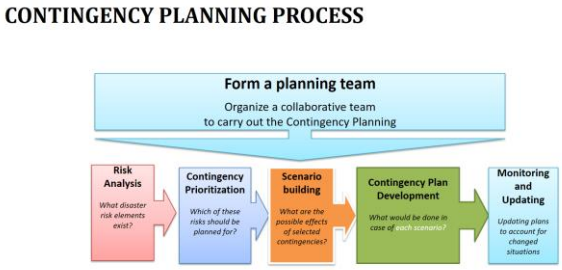
- The first step towards managing the disasters risks and adapting to climate change is to have an information.
- To define the nature of the risk (What? Why? Who? What?...), answer questions about:
  - Characteristics of potential hazards (frequency, severity, location…)
  - Vulnerabilities of communities and potential exposure.
  - Capacities of the community/institutions/environment.
- Helps in the prioritization of DRM measures (what? Where? Why? How?...)
- This will help decision makers at all level to be better informed in planning
- Cornerstone of the:
  - DRM policy and DRM Strategy Framework
  - DRR plan (mitigation/adaptation and contingency)
  - Early warning information
  - Baseline of development programmes
    - Wereda Development plans
    - Projects of partners
  - Use of the Profile is promoted by:
    - Creation of friendly formats
    - Website available for anyone

- Handover all materials for region, zone and wereda

C. Wereda DRR Planning

- It is analyze and manage the causal factors of disasters to:
  - Reduce exposure to hazards,
  - Improve preparedness for adverse events
- It includes:
  - Disaster Risk Mitigation/Adaptation Plan
  - Contingency Plan
- It is based on the information from the Wereda Disaster Risk Profile
- Wereda DRR Planning = Resilience + Sustainable Development





D. DRR Implementation

- DRR implementation have been conducting in all regions and with the support of:
  - EU (5 Regions)
  - PSNP IV (All Regions)
  - Spanish Aid project (Oromia, Afar, Somali)
- Activities mainly focus on:
  - Irrigation development/maintenance
  - Water point development/maintenance
  - Women empowerment/job creation
  - Livestock development
- Examples:
  - Natural Resource Management Practices – Shalla and Boset Woreda – Oromia
  - Water harvesting pond and his vegetable production – Boset woreda
  - Water harvesting and water point construction in Somali region
  - Borich Woreda women empowerment and water expansion

- Water harvesting and women empowerment - Meket Woreda –Amhara region

E. Status of the Programmes

- Nationally:
  - 462 (58%) weredas data collected
  - 413 (93%) profile done
  - 347 (76%) published on Website
  - 397(86%) DRR Plan done
  - 20 (0.5%) DRR Implementation done 60 planned for this year.
- More than 10,000 government staffs trained in data analysis and profile development.
  - NDRMC established website
- Visit: Http://Profile.dppc.gov.et to access the data.

III. GAPS/ THEMATIC AREAS

A. NDRMC

- DRM mainstreaming issues at all level.
- Equip DRM Institutions through resources (both financial and human).
- Promoting the implementing capacity and social services.
- Limited applications of technological options.
- Climate change and extremes.
- Recurrent drought and newly emerging risks.
- Improving early warning system and creating system for DRM
- Monitoring and evaluations issues and technology support
- Limited synergies and coordination
- In reducing dependency syndrome related to aid

B. Oromya RDRMC

- Addressing Root Cause and Effects of Recurrent Drought
- Effect of Existing EWS on Early Response DRM
- The Effect of Coordination on DRM.
- The Impact of Desert-Locust Infestation.
- Need of Model Development in Approaching DRM
- Effects of Decentralizing Disaster Risk Management.
- Assessment of Knowledge Management Situation.
- Assessment of the Root Cause of IDPs and Its Effect
- Technology Utilization Status and Its Effect in DRM

C. SNNPR DRMC

- Poor local institutional capacity towards DRM Mainstreaming
- Methodological gaps for DRM mainstreaming
- Methodological gaps towards WDRP, DRR planning and DRR implementation
- Factors contributing for increasing of flood and landslides
- Challenges and opportunities for DRM mainstreaming
- Drawbacks of EWS of the region and its contribution for Disaster risk Reduction
- Impact of recurrent droughts over food security of households
- Shortage of agricultural land and its contribution towards farming community

D. Sidama RDRMC

- High population pressure, Land shortage and fragmentation

- Land degradation and Improper land use system
- Increasing trends of crop pests and disease (especially in Enset crop).
- Lack of coordinated early warning system and expertize capacity to DRM
- Limited capacity in use of the available information and technology for DRM
- Increasing in climate change and geological induced disasters

E. Amhara RDRFSMC

- Loose coordination among DRM actors at all level
- Knowledge management capability for different DRM structures
- Risk perception of communities
- Institutionalizations of DRM knowledge & skill competences in relation to assessment, analysis and interpretation
- Collaboration with Universities and research institutes to manage disasters
- Border conflicts induced displacements and its impact
- Lake Tana and weed infestation and it effect on biodiversity
- Fogera Flood, locust infestation and east Amhara drought impacts

F. Somali RDRBC

- Durable solutions for the IDPs: Appropriate options for various categories of IDPs
- Flood risk mapping and assessment (with intervention plan)
- Impacts of climate change on pastoral and agro-pastoral communities
- Strengthening institutional capacities and systems for DRM
- Livestock disease mapping and risk assessment
- Understanding the drivers of conflict among the pastoral and agro-pastoral communities and strategies to address
- Enhancing the indigenous DRM mechanisms
- Land and water resource management in riverine areas

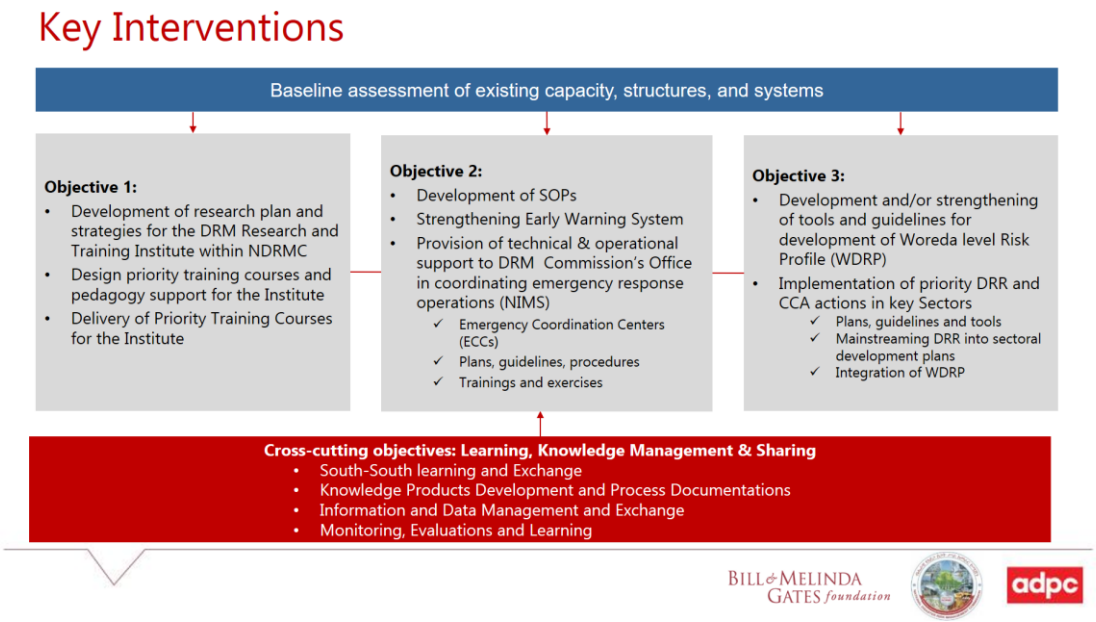
"Strengthening Institutional Capacity and Preparedness for Emergency Response in Ethiopia (SIPERE) - Highlights on Program Interventions", Mr. Nazreth Fikru, ADPC/NDRMC

PROGRAM BACKGROUND

- Jointly designed and implemented by NDRMC and ADPC with funding support from Bill & Melinda Gates Foundation (BMGF)
- Duration: Nov 2016 and October 2021
- A model for strengthening institutional leadership and capacity of NDRMC and key sectors for implementing priority programs under DRM-SPIF
- Has the vision of Replicating experience in Asia, through south-south learning and knowledge exchange

Scope and Approach - Overall Objective

- "To improve the institutional capacity and preparedness to respond and recovery from disasters in Ethiopia by strengthening institutional leadership and technical capabilities of the National Disaster Risk Management Commission (NDRMC) and key sectors of Agriculture and Health for the implementation of DRM Strategic Program and Investment Framework (SPIF)"



I.
II.
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IX. OBJECTIVE 1 - *STRENGTHEN PREPAREDNESS FOR RESPONSE THROUGH ESTABLISHING A RESEARCH INSTITUTE UNDER THE NDRMC*

Establishing a Study, Research, and Training Directorate at NDRMC

- Development of DRM strategic framework and design of training courses
- Establishment of DRM web portal and digital library
- Support integration of young DRM Graduates in NDRMC

A. Development of DRM strategic framework and design of training courses

- A comprehensive baseline study suggested the establishment of a semi-autonomous Research and Training Institute within NDRMC
- The Government established a Study, Research and Training Directorate at NDRMC
- Key activities of SIPERE
    - Multi-sectoral TNA to identify knowledge and skills gaps among DRM implementing institutions
    - Mapping of institutions, existing DRM training courses, and design priority DRM courses to address knowledge gaps
    - Development of National DRM Research & Training Strategy as operational framework for NDRMC New Directorate

B. Training Needs Assessment and DRM Research Study

- A national consultancy firm commissioned to carry out the assignment
- The study covered Oromia, Amhara, Afar, Somali regions and Addis Ababa City Admin
- Data collection completed in 22 national and International organizations, 4-regions ,12 woredas and 1-city administration, and 2-urban woredas
- Overall 20 FGDs and 363 KIs organized
- Experience from 4 Asian and 1-African country on DRM Research and Training reviewed
- The consultancy work is in its final stage (Data analysis completed and draft report being finalized)
- Stakeholder consultative workshop planned in September 2021 to enrich and finalize the strategy document

C. Web Portal and Digital Library establishment

- Existing static website of NDRMC technically reviewed by IT experts of ADPC, ACDRM & NDRMC to identify the drawbacks and needs for improvement
- Upgrading to a dynamic/interactive web portal and improved Digital library
- IT specialized firm commissioned to closely work with ICT-Directorate and support the development of web portal and digital library since April 2021
- The Web Portal serves as a tool for information Management, Knowledge exchange
- Digital library: provide organized, coherent access to large digital DRM resources for the SRT-D and other NDRMC structure
- Experience of ADPC-BMGF program in India integrated

Key outputs of Web Portal and Digital Library

- Development of:
    - Web Portal, intranet ,shared folders and social media and organizational email
    - Establishment of digital library using Drupal Technology

    - Development of Web Content Management Guideline
    - Development of User-friendly Training Manual and conduct User Acceptance Test (UAT)
- Training of system administrators and users
- Web portal launch and follow up technical support

D. Support integration of young DRM professionals in NDRMC

- Integration 10 young DRM graduates within NDRMC serving as interns
- The internship program is instrumental in filling HR gaps
- NDRMC has a plan to absorb the interns into it existing and new organizational structure
- Developing sustainable approach to Internship Program

Improvement of NDRMC ICT infrastructure and virtual working environment

- Installation of Improved ICT Equipment
    - Detailed diagnostic assessment of NDRMC existing ICT infrastructure & network and identification of improvement areas
    - The commission's meeting hall and the National ECC policy room fully equipped with ICT for effective the video conferencing and audio systems
- Enhanced application of Virtual working environment
    - Internet connectivity enhanced & zoom license provided to NDRMC, Oromia, Afar, and Somali ECCs to support reliable virtual working environment, hosting multiple online regular meetings
    - Virtual platform User guides developed and trainings delivered to ICT teams and other end users at NDRMC and the target regions.

X. OBJECTIVE 2 - IMPROVE EMERGENCY COORDINATION & RESPONSE MECHANISMS OF THE DRM COMMISSION

Improve Emergency Coordination & Response Mechanisms

- Installation of Improved ICT Equipment
- ECC capacity assessment & identification of minimum standards at National, Oromia, Afar and Somali regional ECCs
- Development of systemic approach to ECC operationalization through strengthening linkage among national, regional and sectoral ECCs and EWS
- Installation of ICT equipment, provision of office equipment, 4LTE modems, Zoom license
- Establishment of virtual working environment & staff training
- Introduced After Action Review as a tool for learning from practices and enhancing continuous improvement

XI. OBJECTIVE 3 - FACILITATE IMPLEMENTATION OF PRIORITY DRR AND CCA ACTIONS IN AGRICULTURE & HEALTH SECTOR PLANNING PROCESS AND STRATEGIES

DRM mainstreaming review and enrichment of existing processes, tools and guidelines

NDRMC

- WDRP review, validation and implementation
- Capacity building on PDNA
- High level advocacy for DRM mainstreaming into sectors

Health

- Strengthening Health Rapid Response Team in 3 regions
- Support COVID-19 Risk communication & community engagement

Agriculture

- Hardware and technical support to Agro-met Advisory Service
- South-South learning & knowledge exchange visit
- Support integration of DRR/CCA into sector planning

BILL & MELINDA GATES foundation

adpc

“ACDRM's Roles and Contributions”, Dr. Abiy Zegeye, Addis Abeba University (ACDRM)

I. BACKGROUND

Mission and Vision

- Established 6 years ago with joint agreement of AAU and NDRMC
- Mission: "To achieve an effective disaster risk management system through the building of community resilience, awareness raising, strengthening of institutional mechanisms, enhancement of knowledge and skills, and facilitation of the exchange of information and experience."
- Vision: "Enabling resilient communities and sustainable environment through disaster risk management and climate change adaptation and mitigation."

Objectives

- Professionalize the DRM workforce
- Promote research and utilization of science based information to analyze and address disaster risks
- Support the mainstreaming of disaster risk management and climate change adaptation and mitigation as an integral part of development processes
- Development and strengthening of systems to reduce natural and disaster and climate anthropogenic change impacts
- Become a repository development partnership and networking to promote and share DRM and climate change adaptation knowledge, sound practices and experiences

Roles and Services

- The roles and services of the Center can be categorized into two main functions and with specific areas of attention:
    - Knowledge Generation and Acquisition
        - Research and community outreach
        - Policy, partnership and networking initiatives
    - Knowledge Management and Sharing
- The Research and Community Outreach primarily facilitates and generates lessons through application of innovative ideas with communities and other stakeholders.
- Lessons learnt from the application of cutting edge and innovative ideas will be linked to Policy, Partnership and Networking for wider impact.
- The Policy, Partnership and Networking provides learning platform on ways to work and influence other key actors. Thus, distillation of knowledge in both fronts is essential input for other functions of the Center that fall under Knowledge Management and Sharing.

II. RESEARCH AND COMMUNITY OUTREACH

- Applied/Action Research
    - Special programs for designing and promoting new DRM and Climate Change policy and strategies
    - Measuring resilience of human elements at risk (segregated by age and sex), ecosystems, infrastructures, agriculture (crops and livestock) to climate related and human made hazards.
    - Socio-economic and political benefits of DRM, CCM and CCA interventions
    - Climate change impact modeling and output dissemination to sectors: Information segregated according to sector needs
    - Routine Early Warning impact analysis & sectorial assessment

- Development of an effective System of DRM & CC Impact

    - Technical assistance for improving decadal & seasonal forecasting of climate change & variability and associated risks
    - Risk assessment and risk reduction measures based on agrometeorological data and hazard frequencies
    - Community Disaster Risk Management & CCA&M as well as ecosystem management with associated services

III. KNOWLEDGE MANAGEMENT AND SHARING

- Institutional & individual capacity development
    - Provide high quality training services. Development of training curricula & manuals, practical/field exercises, study tours, case studies, etc. at sub-national, national & continental levels
    - professional development programs (certificate courses)
    - accreditation
    - specialized leadership trainings for policy-makers and change agents
    - maintenance of an internationally accessible roster of individual & institutional capacity development

- Information repository and sharing
    - collect, collate, document & disseminate innovative practices (social & technological
    - online database and library services of research outputs
    - provide training manuals online (sharing with partner institutions) knowledge networking events

IV. POLICY, PARTNERSHIP AND NETWORKING

- Strategic and policy advice
    - Technical assistance for policies, laws, regulations, etc. formulation and revision
    - Strategic planning on DRM and CCA/CCM
    - Promotion of government policies on DRM and CC
    - Technical assistance on urban development and subsequent DRM/DRR
    - Technical assistance for land-use planning
    - DRM and CCA/CCM mainstreaming into development policies and programs
    - Design special programs for promoting new DM policy and Strategies

V. TRAINING AND EDUCATION: ACHIEVEMENTS

PLATFORM

- Set up a computer cluster room that accommodates 20 trainees
    - 20 high-performing laptops
    - instructor console
    - projector and electronic white board
    - plotter printer
    - switch & router that allows a V-LAN
    - back-end Windows+Linux+NAS production and storage servers
    - audio-video recording & editing sound proof studio
    - public IP
- The setting up of such a facility permits:
    - face-to-face
    - online (Moodle LMS)
    - blended learning
- Current training theme/focus: Data. Data. Data
- Current training modality: Technology. Technology. Technology.
- Digitization of data collection, analysis and dissemination.
    - Preference for quantifiable data (measurable, ranked, spatial, etc.)
    - quality (minimize error)
    - timeliness (utility)
    - relevance (avoid redundancy, specific)
    - rigorous & automated analytics (statistical tools, big data, data
    - manipulation)
    - data presentation
- Current training methodology:
    - preference for online & blended learning
    - continuous & updated
    - focus on hands-on/practical
- Training modules prepared:
    - School-based DRR
    - Research Methods in DRM
    - Chemical water disposal
    - Basics of QGIS & Remote Sensing
    - Application of QGIS & RS for DRM
    - Application of QGIS & RS for Drought
    - Application of QGIS & RS for Flooding
    - Linux fundamentals and administration
    - Python programming
    - PyGIS programming
    - Basics of Database with PostgreSQL and Spatial Databases with Post-GIS
    - Spatial Statistics
    - NodeJS & Java Programming
    - GIT Version control
    - Docker
    - Network Administration
    - Training Skills
    - DE and Blended Training Skills
    - Curriculum Develop & Review (Constructive Alignment)
    - Academic Administration
    - Academic Quality Assurance

- Except one training module, all other prepared courses were delivered:
    - Target trainees thus far:
    - development agents
    - TVET instructors
    - high school teachers
    - academicians
    - technical experts in federal and regional governments
- Certification courses we organized and delivered by accredited Austrian &
- Indian entities:
    - Environmental Management System (ISO14001)
    - GHG-MRV (ISO14064/65)
- Courses we organized and delivered by ADPC
    - DRM in a Changing Climate
    - Master course on DRM
    - Executive course for Leadership in DRM
- Courses we organized and delivered by Dutch university:
    - Setting up and data acquisition from EUMetSat
    - Academic quality assurance
    - Photogrammetry*
- Courses we organized and delivered by an Italian entity:
    - myDewetra data integration and visualization platform
    - RISICO: Forest _re forecast and early warning model
- Supportive courses that we delivered:
    - Moodle learning management system (for instructors)
    - GoogleMeet as an aid for DE
    - LATEx typesetting (for data presentation and report writing)
- Three PhDs in progress (in cooperation with ITC, Netherlands) in one of
- the most food insecure areas of the country (kuta ber and dessie zurya)
    - Remote sensing of soil moisture and crop production
    - Tracing nutrients from soil to body
    - Land tenure and management
- Four MSc underway:
    - Reliability of forest _re forecasts
    - Three MSc (component of PhD research)
- Two MSc supported by supplying computing resources:
    - Landslides in Abay gorge
    - Structural integrity in earth quakes
- Won an GEMS-Erasmus+ in partnership with ITC, Netherlands:
    - A total of 60 full 2 year MSc competitive scholarships, of 15 per year
    - for four years.
    - Education at one of four European universities (Belguim, Netherland,
    - Estonia and Sweden)
    - First batch of 15 begin August 2021.
    - No Ethiopian candidates made it this year.
- Financial & material support of curriculum development and revision at
- AAU:
    - Revision of Master program in "Food Security Studies"
    - Development of Master program in "DRM and Development"
    - Development of PhD program in "DRM and Development"
- All three curricula expected to be operational this coming academic

VI. RESEARCH

- Three PhD and affiliated master research projects.
- Forest _re forecast and EW Bulletin (led by CIMA):
    - machine learning algorithm platform
    - dynamic weather and quasi-static data (weather forecast, LULC,
    - Parks/reserves, etc.)
    - technical experts trained at NDRMC, NMA, EFCCC trained
    - trial bulletins being generated and disseminated
    - forecast validation undertaken
    - long-term forest _re forecast system under development (for NDRMC
    - multi-hazard bulletin)
    - equipment such as desktop, laptop, server, dongle, webcam, headset,
    - etc. procured and distributed
- Development of products:
    - 1 Enform: A multi-platform app for crowd-sourced disaster reporting
    - 2 Wooha: a small software for estimating plant cover on lakes from satellite data
    - 3 Soil moisture sensor: Proof of concept developed for continuous measurement of soil moisture at 20-25cm depth
    - 4 CHIMS: a hierarchical chemical inventory management system that tracks chemicals from point of purchase to disposal; and allows transaction.
- Unfunded proposals:
    - To develop a soil moisture sensor at less than 300Birr per unit
    - To develop a comprehensive software platform that alerts and tracks IDPs using mobile phones
    - To complete the back-end development of CHIMS

VII. ADVISORY AND TECHNICAL SERVICE

- ACDRM staff also serve on various taskforces, committees, technical working groups, etc. as part of an effort to lend technical support where needed.
    - National EW-TWG
    - National CBRN-TWG
    - Member of team to develop the national DRM Mainstreaming
    - guideline
    - Various ad hoc assignments as requested

  * CBRN, in addition to technical advice, also contributed to development of tools for surveys.
- ACDRM also established AAU students "DRM & Volunteer Services Club".
- Currently, DRM-VSC membership is at its lowest since funding is hard to come by.

VIII. WEREDA DISASTER RISK PROFILE

- About five years ago, worked on re-thinking the WDRP to make it:
    - more time efficient
    - more cost effective
    - more rigorous (Accuracy, quantitative, completeness, relevance)
    - automated end-to-end
- The aim was to:
    - increase efficiency
        - time: reduced time in data collection, (automation)

        - Manpower: more activity per person, better prepared. (automation)
        - resource: (automation)
    - Improved data
        - Relevance: data pertinent to the effort.
        - timeliness: turnaround time shortened
        - quality: data quality check mechanisms
    - objectivity of profile development
- rigorous analytics: appropriate statistical methods
- standardized interpretative tools: flexible
- Initial work begun by:
    - Thorough understanding of the existing WDRP process (from data collection to publishing of profile), used desk review, KII.
    - Examining each step of the WDRP process to identify potential points that could be more efficient, effective, relevant, and rigorous.
    - develop intervention to address identified elements for improvement
    - develop accompanying tools and analytics (including training manual for enumerators)
    - present and garner feedback from NDRMC
    - submitted final total package to NDRMC
- Improvement on data collection tools (only some highlights presented):
    - 1 HHS questionnaire redesigned to collect consistent and quantifiable data. [still with no major departure from the existing indicators]
    - 2 template developed to collect HHS data on an android device (with data SIM card) where GPS coordinate, time date stamp are automatically entered.
    - 3 collected data easily synchronized to a central server on a daily basis (which saves data entry expense, transportation cost, increases timely availability and quality of data)
    - 4 analysis automatically generated based on sets of commands fed/connected to other programs such as SPSS, C.
    - 5 Sector specific KII guideline
- Proposed additional analytics:
    - In addition to the existing analytical methods, more rigorous analytics were proposed with the view that some of the more quantitative data will be adopted.
- Final points:
    - relevant stakeholders will have to be involved to further refine the approach and garner buy-in
    - a back-end database reception server would have to be installed and configured at NDRMC
    - proposed that WDRP package is pre-piloted in two weredas (where no WDRP was done).
    - Feedback from pre-pilot, refinements are to be done and piloted in 25 additional weredas (where some have already had their WDRP done with existing method). This is important for comparative analysis of the benefits of the new approach vis-a-vis to existing one.
- Additional points:
    - It was underlined that digitization was inevitable and environmentally friendly.
    - It was proposed that CSA manage the data collection as it already has the set up and personnel to carry out WDRP simultaneously all over the country. This would mean: that no extensive training of enumerators would be required.
    - Confidence in gathered data would improve.

- NDRMC experts are free to engage on other more pressing issues.

"BDU_IDRMFSS Experience : Education, Research and Community Engagement", Adane Tesfaye Lema (PhD), Director of Institute of Disaster Risk Management and Food Security Studies (IDRMFSS), Bahir Dar University (BDU)

I. BACKGROUND BDU

- Established since 2005 with single program DRMSD at BSC. level and single staff
- Currently we have 27 instructors
    - 2 Associate Professors (M),
    - 11Assis. Prof. (10M & 1F),
    - 9 Lecturers (6 M and 3 F),
    - 1 Assistance lecturer (Male)
    - 2 Graduate assistance (M)
    - 2 Technical assistance (M)
- Mandates of the institute are
    - Teaching (long & short term)
    - Research
    - Consultancy
    - Community service
- **Vision:** IDRMFSS aspires to be one of the leading research-intensive institute in Africa and the first choice in Ethiopia by 2030.
- IDRMFSS is vested in with the **following missions**:
    - Promote advanced research & innovation on the basis of the country's as well as sub-Saharan Africa (SSA) requirements;
    - Produce graduates with relevant professions & necessary competences (knowledge, skills & attitude) to respond to the national, regional & international labor market requirements to eventually ascertain the global competitiveness of the country;
    - Improve lives through evidence-based & transformative community engagement;
    - Enhance demand-driven and problem solving technology generation, dissemination and utilization
- The **guiding Core values of IDRMFSS** promotes and upholds in pursuance of its missions are:
    - Pursuit of wisdom
    - Excellence
    - Innovation and creativity Social responsibility
    - Diversity
    - Internationalization
    - Commitment.
    - Open-mindedness.
    - Consistency.
    - Integrity
- The **seven strategic themes of IDRMFSS** are listed below. These strategic themes inform the process of developing the strategic objectives.
    - Excellence in teaching and learning
    - Excellence in research
    - Excellence in community engagement
    - Advance in human resource development

    - Enhance good governance and leadership
    - Advance in communication and partnership
    - Improve infrastructure and facilities
- The institute Produce More than 950 graduates (>550 undergraduates and > 400 post graduates (MSC)
    - This graduates get employment in various sectors
    - Governmental organizations
    - Non-governmental organizations
    - Private organizations
    - Un agencies

II. EXISTING ACADEMIC PROGRAMS

- Long term programs
- BSC. In DRM and Sustainable Development(current enrolled are 72)
- MSC. In DRM and Sustainable Development (current enrolled students are 25
- MSC. In Climate change & Development (current enrolled incidents 5)
- MSC in in livelihood & food security (current enrolled students are 11
- PhD in Disaster Risk Science (current enrolled students are 5)
- Short term programs
    - Basic fire and fire fighting
    - Occupational safety
    - Incident management system
- Upcoming Academic programs in the coming two years
    - Long term programs
        - M.SC. in DRM and FSR
        - MSC in Agricultural Risk management and Agro meteorology
        - BSc in Occupational hazards and safety
    - Short term training courses
        - Agricultural Risk Management
        - Food security
- So far, the institute has graduated 950 students (550 undergraduate and 400 graduates)

III. EXISTING RESEARCH AREAS

The institute has identified five major thematic research areas as indicated below:

1. Disaster Risk Management
    - Urban and Rural Risk Profiling
    - Agricultural Risk management
    - Public health risk management
    - Environmental Risk management
    - Occupational risk management
    - Industrial Risk management
    - DRM policies, strategies & institutions
    - Application of technology & tools for enhancement of DRM practice
2. Livelihood, Food and Nutrition Security
    - Comparable analysis of different livelihood analysis
    - Comparable analysis of food and nutrition

- Food systems resilience
- Food handling and Safety
- Food and nutrition security and Food systems policies, strategies and institutions

3. Disaster and Development
   - Disaster and Development nexus
   - Impact of disaster and development interventions
   - Environment, population and development
4. Climate variability/Change
   - Climate variability/Change impacts, adaptations & mitigations
   - Climate change and sustainable development
   - Climate change, water and environment
   - Climate change governance, policies and strategies
5. Cross cutting issues of DRM
   - Forced migrations & internal displacement
   - Conflicts management
   - Gender and Special needs (vulnerable groups in DRR)
   - Emerging social issues/traffic accident, corruption, crime, terrorism, fire)
   - Environment and social impact assessment
   - Occupational health and safety

IV. COMMONLY USED RESEARCH TOOLS

- Household Survey (HHS)
  - Household surveys are questionnaires that are given to a sample of households in a population.
  - Their primary advantage is to provide considerable discretion to the interviewer about the information requested of respondents.
- FGD using PRA tools
  - FGD involves gathering people from similar backgrounds or experiences together to discuss a specific topic of interest.
  - FGD is a form of qualitative research where questions are asked about their perceptions attitudes, beliefs, opinion or ideas.

Some of the key PRA tools used during FGD are:

- Diagramming, Mapping and Modelling:
  - ✓ transects - maps (resource, social, farm)
  - ✓ Venn diagrams (presence and contribution of institution)
  - ✓ seasonally analysis (time, Days, weeks and months)
  - ✓ historical analysis (time lines, trend lines, activity profiles)
- Ranking and scoring
  - ✓ Pair wise ranking
  - ✓ Matrix ranking
  - ✓ Matrix scoring
  - ✓ well-being analysis and wealth ranking
  - ✓ proportional piling
  - ✓ pie charts (injera charts)
- Problem analysis
  - ✓ identification and specification

- ✓ causal chaining
- ✓ prioritization

- KII
  - KIIs are one method used in rapid assessment and evaluation for gathering information from partner communities.
  - KIIs are appropriate for generating information and ideas in many situations, particularly the following:
  - When general, descriptive information is sufficient for decision-making.
  - When understanding of the underlying motivations and attitudes of a target population is required
  - When quantitative data collected through other methods need to be interpreted
  - When the primary purpose of the study is to generate suggestions and recommendations
  - When preliminary studies are needed for the design of a comprehensive quantitative study
- Field observation
  - a method where you observe people in 'real' locations and situations, such as workplaces, homes, etc.
  - help you to understand people's behaviour, habits, needs and social relations in their environment.
  - can give you unique information, because you don't have to rely on other's verbal interpretations of situations, but you can see it for yourself

V. Research and outreach activity performance

1. Urban Risk Profiling (AA, BD, DD)
   Out puts of AA city risk profiling
   - Woreda Risk Profile (21 woredas in 10 sub cities)
   - Community Risk Profiles in each woreda
   - Hazard maps by woreda
   - Probability distributions of monetary losses caused by hazards
   - Decision support tool (Network Linear Optimization for Fire Truck Routing)
   - Enhance Capacity experts at BDU, FDRMC and ERCS
2. Training Guide Development
3. Regional DRM Strategies
4. Local Drought Mitigation through area closure and tree planting
5. Sample publication in Peer review journal

VI. Strategic engagement (Partnership) of IDRMFSS

Within country

- BDU/USAID Internship Program Support(2012 – now)
  - 154 graduates benefited
  - Existing Undergraduate program curriculum improved
  - Employee organization gaps filled
  - DRM mainstreaming enhanced
  - Institute role become promoted

- National Incident Management System (NIMS)-USAID/-NDRMC, US (2010 – now)
    - Master trainers trained
    - Participate in cascade training (MAC, EOC, ICS, Planning processes , Comprehensive Emergency preparedness and AHIMT)
    - Participate in AA Urban risk profiling
    - Practice flood table top exercise
    - Manual development (MAC, EOC and ICS)
- National Disaster Risk Management Commission (NDRMC)
    - Participate in policy revision
    - Participate in livelihood zoning
    - DRR international day celebration
    - Internship program implementation
    - Woreda risk profiling
    - Capacity building
    - Technical support
- Various regions DRMC
    - Internship program implementation
    - Capacity building
    - Technical support
- World Food Program: Adapting the 3PA to Urban Settings (2019/2020)
    - Livelihood programming at Dolo Ado, Gambella and Bahir Dar
- Addis Ababa Fire and Disaster Risk Management Commission
    - Internship program implementation
    - Woreda risk profiling
    - Capacity building
    - Technical support
- DireDawa city Administration DRM Office
    - Internship program implementation
    - Woreda risk profiling
    - Capacity building
    - Technical support
- Ethiopian Industrial Parks Development Corporation
    - Internship program implementation
    - Curriculum revision and development
- EU DRM Project
    - Research
    - Training
    - Knowledge management system
- Others (Care, Red cross society, Plan Ethiopia, UNDP)

External /International level

- Nuffic – As anchor for the Horn of Africa DRM and FSR (wageningen centre for research & innovation, Van hall larestine applied science university, University of Juba and University of Hargisa (2020 – 2022)
- Building Resilient Food Systems in Protracted Crisis Situations (2020 – 2022):
    - Joint Regional Master Programme & Short Courses for Resilient Food and Nutrition Security Outcomes (North_ south _south Consortium through Orange Knowledge program.)
    - Climate Change, Seed Systems and Community Seed Banks (North_ south _south Consortium through Orange Knowledge program)

    - Horticulture for Improved Nutrition and Income Generation (North_ south _south Consortium through Orange Knowledge program)
- Horn of Africa Food System Resilience (2021 – 2022):
    - Making Horticulture Work for Healthier Diets and Income Generation in Protracted Crises(North_ South _South Consortium through Orange Knowledge program.)
- GNDR) through EU support
    - Vulnerability profiling
    - Capacity building
    - Local drought mitigation
    - Waste management
    - Job creation
- Africa Uninet with Austria (Book university), Burkina Faso university(Burkina Faso) and Mozambique university (Mozambique)
    - Gender-specific adaptive capacity on Climate Change and Food Security Status:
    - A catchment approach on agro forestry systems (2021 – 2022)
    - Interfaces for integrated land/water resource management (2021 – 2022)
- Africa union (AU)
    - Member and secretary of Science and Advisory group for AU DRR enhancement
- Periperi U Network collaborate with 11 Africa universities since 2006
    - Ethiopia
    - Uganda
    - Kenya
    - Tanzania
    - Mozambique
    - Madagascar
    - South Africa
    - Cameron
    - Nigeria
    - Ghana
    - Senegal
    - Algeria

VII. COMMUNITY SERVICE ENGAGEMENT

- Community training on Flood management and WASH
- Emergency management technical support on emerging issues (Covid- 19, flood incidence, internal displacement due to conflict, Desert locust invasion)
- Support cities risk profiling (AA, BD and DD)
- Enhancing livelihood of the community
- Solid waste management
- Road traffic accidents
- Support R4 initiatives

VIII. FUTURE INTEREST OF IDRMFSS

- Develop the professional human Resource capacity of the institute
- Equip the infrastructure and facilities of the institute on program base
- Expand our academic and research programs
- Build more partnership in academics, Research, Consultancy, community services
- Facilitate employment of our graduates
- Participate DRM mainstreaming and Decentralization

"Arba Minch University and its programs related to DRM", Abera Uncha (PhD), Arba Minch University - Institute of DRM

I. BACKGROUND ARBA MINCH UNIVERSITY

- Established in 1986 as Arba Minch Water Technology Institute (AWTI)
- It was established to addressing water related issues of the country.
- After 18 years, AWTI was upgraded to Arba Minch University in June 2004.
- Currently the university runs:
    - 74 undergraduate programs,
    - 101 masters programs, and
    - 24 PhD programs.
- AMU consists of two institutes, five colleges, and three schools which are situated across the university's **six** campuses:
    - Main Campus, Abaya Campus, Chamo Campus, Kulfo Campus, Nech Sar Campus, and Sawla Campus.
    - **Water Technology Institute**
    - **Institute of Technology**
    - College of Natural Sciences
    - College of Business and Economics
    - College of Medicine and Health Sciences
    - College of Social Science and Humanities
    - College of Agricultural Sciences
    - School of Graduate Studies
    - School of Law
    - School of Pedagogy and Behavioural Studies

II. DRM RELATED PROGRAMS IN SGS

- With the purpose to properly control and manage this resource, AMU has been devoted to produce water engineers in quality and quantity.
- Most of the water engineers of the country are graduates of AMU.
- However, because of natural and or anthropogenic factors, there are several environmental disasters have been occurring around Arba Minch.
    - Biodiversity depletion of the lakes Abaya and Chamo
    - Extensive soil erosion and degradation from the highland to the lakes
    - Out follow of Lake Abaya and Chamo to the surrounding banana forms, due to siltation
    - Expansion of exotic plant species in Lake Abaya and Chamo, **water hyacinth** (Enboch)
    - *Enset* is one of the staple foods of the Gamo people in the highland is under threat by Enset disease (Bacterial wilt)
    - Banana wilt is a disease caused by bacteria which causes banana to wilt which is another disaster
- To provide Scientific solution to these problems, AMU launched DRM related PhD and MSc programs
- **PhD in Disaster Risk Management**: This PhD program is aimed to:

    - display the nature, causes, extent, spatio-temporal characteristics and impacts of major types of natural as well as manmade risks, and to delineate how these can be managed at a global, regional and local scale.
    - bring about key capacities, techniques and skills for analysing the risks of natural and human induced disasters
- **PhD in Environment & Natural Resource Management:** This PhD program is aimed to:
    - produce PhD graduates who will employ latest analytical techniques in a scholarly research to solve problems related to natural resource management
    - bring about key capacities, techniques and skills for analysing environment and natural resources
    - offer a forum for a more focused discourse in order to improve the efficiency of the research program in responding to the needs and priority areas of the country in natural resource management.
- **PhD in Geo-informatics and Earth Observation:** This PhD program is aimed to:
    - The goal of the this PhD graduate program is to train professions that will have critical understanding and competence in the development of systems and tools for the acquisition, processing, transformation, analysis, storage, presentation and use of geographic information in solving environmental and societal problems.
    - Students from different discipline joined this PhD program
- **PhD in Soil and Water Management**
    - equip the students with the current understanding and challenges of Soil and Water management at national and international levels
- **PhD in Biodiversity Management**
    - **The aim of this PhD Program** is to contribute to improved conservation and sustainable management of Ethiopia's biodiversity and enhance its roles in economic development of the nation through education, research and community outreach.
    - **The general objective** of the PhD Program is to produce highly qualified and skilled future leaders, managers and policy makers in biodiversity, conservation and natural resource management with international standard, scientific competencies and established scientific knowledge to work on and provide leadership in Biodiversity Conservation and Management.
- **Environmental Change Management (MSc.)**
    - To experts who have a broad understanding in all aspects of environmental change, analytical in their approach, and are competent and aware decision-makers.
    - To develop a sympathetic understanding of how various responses and inaction to environmental change may affect different societies and groups within societies, to comprehend the equity and limits of possible actions.
    - To bring about key capacities, techniques and skills for analysing environmental change and responding effectively to it through policy and management.
- **Geoinformatics (GIS & RS) –** MSc
    - The goal of the ***geoinformatics*** post-graduate program is to train professions that will have critical understanding and competence in **the development of systems and tools for the acquisition, processing, transformation, analysis, storage, presentation and use of geographic information** in solving environmental and societal problems.

- These skills help professionals to be able to design and carry out multi-disciplinary research and development projects in various field of geo-information science

III. RESEARCH PROJECTS

- Research Projects funded by AMU are based on the common understanding with the local government (Zones and woredas are consulted).
- Grand research proposals are accepted if considering the problems identified by sector offices of AMU zone and woreda
- MSc and PhD students are also encouraged to focus on already identified problems to secure additional research fund.
- On-going Research Projects
  - ✓ REDUCING SOIL EROSION IN DOMBA WATERSHED, Ethiopia
  - ✓ An Integrated Land-Lake-Atmosphere Modelling System (AMU-IUC)
  - ✓ Lake Chamo protected area (100ha lake enclosure)
  - ✓ Gezsha forest buffer zone and mini-enclosures
  - ✓ Grand kulfo project
    - Identify the areas that contribute most to sediment export to find Sustainable Land
    - Management that reduces sediment export
    - Prevent invasive species expansion (i. a. Water hyacinth)
    - Chamo basin erosion hotspot priority map

"Experience from Hawassa University", Mr. Semeredin Yimer (Ph.D. Candidate, HU, IPDR), Hawassa University

I. BACKGROUND

- Hawassa University is one of the first generation universities in Ethiopia
- Established in 1976 as the then Awassa College of Agriculture under Addis Ababa University.
- The University was established in 2000, by then Debub University: Merging
    - Awassa College of Agriculture
    - Wondo Genet College of Forestry
    - Dilla College of Teacher Education & Health Sciences (now Dilla University).
- In 2006, the then Debub University was renamed as Hawassa University (HU) by Regulation No. 127/2006.
- Institutes
    - Institute for Policy and Development Research (IPDR)
    - Institute of Technology (IoT)
- Colleges
    - Agriculture (Center of Excellence in Food Science and Nutrition
    - Education (Center of Excellence in Teachers Education and Educational Leadership)
    - Social Sciences and Humanities
    - Law and Governance
    - Medicine and Health Sciences
    - Natural and Computational Sciences
    - Forestry and Natural Resources (Center of Excellence Forestry)
    - Business and Economics(Center for Excellence in Entrepreneurship)
    - Newly Established Daye Campus
- The Triple Missions
    - Teaching
    - Research and Technology Transfer
    - Community Engagement

II. TEACHING AND LEARNING

- **Masters**
    - Climate Change and Development
    - Climate Smart Agricultural Landscape Assessment
    - Climate Change and Sustainable Agriculture
- **PhD Program**
    - Climate Change and Bio-energy Development
- **Digital Library**
    - Climate Smart Agricultural Land Assessment
    - Climate Change in Development
- **Research conference**
    - Agriculture, Nutrition, and Climate Change (2019)

III. ACTIVE RESEARCH PROJECTS: NATIONAL AND INTERNATIONAL PARTNERS

- Research and Capacity Building in Climate Smart Agriculture: Horn Of Africa
- Clim_Etsn: Capacity Building in Climate-Smart Agriculture and Ecological Sanitation in Ethiopia
- RELANTIR: Reducing Land Degradation and Carbon Loss From Ethiopia's Soils to Strengthen Livelihoods and Resilience

Natural Resources and Environmental Protection Research Theme

- Climate Change (Causes and Impact)
- Response to Climate Change (Adaptation and Mitigation Strategies)
- Causes, Practices and Challenges of Natural Disasters

IV. COMMUNITY ENGAGEMENT

- Trainings
    - Farmers on crop and livelihood diversification, as an option for climate change adaptation.
    - DAs on Climate change adaptation and early warning system
    - Enhancing local community adaptive capacity to climate variability and change
- Demonstration
    - Climate Smart technologies for Maize in dry agriculture system:
    - Demonstration of Early maturing varieties of Maize, and Sorghum
- Dissemination
    - Promotion and Pre-scaling-up of Common Bean in moisture stress
    - Supply of multi-purpose tree seedlings to be planted in degraded areas
    - Introducing high-yielding climate change resilient and food-security varieties of crops
    - Providing poultry as an alternative means of livelihood

V. INSTITUTE OF POLICY AND DEVELOPMENT RESEARCH (IPDR)

- Post-Graduate Program
    - MA Students
    - Ph.D. Students
- Climate Change and Green Development Cluster
    - Climate Change Adaptation and Mitigation
    - Climate Smart Agriculture and Environmental Governance
    - Climate Change and Food Security nexus
    - Disaster Risk Management and intervention
    - Natural Resources Degradation
    - Indigenous Knowledge for Natural Resource Conservation
    - Gender and Climate Change

VI. OPPORTUNITIES: HAWASSA UNIVERSITY

- Availability Academic Programs: Integrate DRM in Courses, CS & Research
- Diverse Research Experts, Skills, and Specialization yet Relevant to DRM
- Effective Institutional Structure
- Complementary Disciplines to Develop Innovative Solutions
- Execution Capacity: National and International Research Projects
- Local Government and Community Credibility

- Strong & Long Experience in International Collaboration i.e. Norad, Nuffic, Sida, CIDA etc.

Expectation: EU-DRM Project

- Collaboration in the Triple Missions of Hawassa University
    - Teaching and Learning
    - Research and Technology Transfer
    - Community Engagement
- Willingness to Share Resources and Experiences

"The Role of HEIs in capacity building of DRM institutions in Ethiopia", Dr. Terefe Tolossa, Ambo University

I. BACKGROUND

Brief history of Ambo University

- Ambo University was established in 1939 EC (1946GC), is one of the oldest higher learning institutions in Ethiopia (entry from grade 8, attend 9-12 in the school & awarded Diploma in Agriculture)
- In 1951 EC (1958GC) the school was renamed as Ambo Agriculture and Forestry Secondary School with the addition of Forestry Department which also ran a 4 year program
- In 1960 EC (1967GC) the school was promoted to the level of 'institute' and named as Ambo Institute of Agriculture and started to offer a two-year post-secondary diploma courses in General Agriculture
- In 1969 EC (1977) the institute was granted a Junior College status and named as Ambo Junior College of Agriculture with an added objective of **research** and **extension** apart from teaching.
- In 1984 E.C (1992), the institution was named Ambo College of Agriculture
- In 1995 E.C (2002), **two** more diploma programs opened (Chemistry and Biology Laboratory Technology)
- The college was affiliated to **Jimma** University by the name Jimma University - Ambo College in the same year
- In 1996 EC (2003) the institution started to offer **undergraduate** degree programs in the fields in five programs
- By 1999EC (2006), the college opened 15 undergraduate and 2 postgraduate programs
- Megabit 3, 2000 E.C (12 March, 2008), the college was promoted University College
- In 2009, it then promoted to Ambo University
- Currently, the University runs 63 graduate and 85 undergraduate programs which are divided into eight colleges/institutes having 82 academic departments in **four** campuses

The department of DRMSD

- The department of DRMSD is one of the programs in the university at Guder Mammo-Mezemir Campus
- It was launched in 2007EC (2014) running undergraduate program

II. TEACHING

- Since then, students graduated from the department in four rounds until 2012 (overall 170 students of which 132 are male & 38 are female)
- Employment rate was around 46% according to tracer study conducted by the department in 2012
- The department is planning to open graduate program on DRM & Sustainable Development as of next year (under review)

Staff profile

- Currently the department has four MSc and One PhD active staff members
- Three staff members on study leave for their MSc (One in BDU, One in HU & One in AAU)

- Two staff members on study leave for their PhD (One in AAU, One in AMU)

III. RESEARCH:

The department is engaged in research activities such as:

- LULC analysis and its impacts on soil loss, ecosystem services and environmental income in the central highlands of Ethiopia (published paper available online)
- Evaluating the impacts of climate and land use/land cover (LU/LC) dynamics on the Hydrological Responses of the Upper Blue Nile in the Central Highlands of Ethiopia
- The impact of land use and land cover (LULC) dynamics on soil erosion and sediment yield in Ethiopia
- Assessment of the linkages between ecosystem service provision and land use/land cover change in Fincha watershed, North-Western Ethiopia
- Changes in Ecosystem Service Values in Response to Changes in Landscape Composition in the Central Highlands of Ethiopia
- Human modified landscape structure and its implication on ecosystem services at Guder watershed in Ethiopia
- The impact of land use/land cover change on ecosystem services in the central highlands of Ethiopia
- Vulnerability to climate related shocks and adaptation strategies by farm households in Ada'a Berga district (Published paper available online)
- Past and future impacts of climate change and variability on crop growing seasons in West Shewa zone, Oromia region (Published paper available online)
- GIS based Flood hazard zonation in upper Awash basin (under going)
- Involved in DFSA-SPIR project which was funded by USAID and administrated by World Vision Ethiopia under which the staff members of the department contributed three research projects in two regions (Oromia and Amhara)
- The research title include:
    - 1. Climate change induced shocks, vulnerability and resilience in two regions (West Hararge zone, North Wollo zone and Wag Hemera zones)
    - 2. Assesment of climate change related hazards towards sustainable disaster risk reduction in selected woreda of Oromia regions (West Arsi zone, East Harage and West Hararge zones)
    - 3. Natural resource management for climate change adaptation and mitigation: the case of comprehensive land husbandry approach in selected watershed of North Wollo and Wagi Hemera zones

IV. TRAINING

- The department has carried out training on building resilient communities through disaster risk reduction and climate change adaptation for zonal and district level DRM experts in West Shewa zone
- Is also planning to conduct training on DRM strategies, tools and guidelines for experts at various levels in government offices working on DRM
- Planning to conduct training on awareness creation of communities in DRM within the mandate area of the university based on the research outputs

V. EXPECTATION FROM EU-DRM PROJECT

- Working in collaboration in research areas related to disaster risk management

- Collaborating in training programs designed by the department
- As a potential stakeholder, the project staff members could also provide expertise in teaching, research and reviewing curriculum
- Establish collaboration for student internship
- The need for collaboration on training of experts, local communities and officials on disaster risk management
- Exchange of up-to-date information on natural and man-made disasters (working on early warning systems)
- Participate communities (especially risk prone) on managing of disaster hit areas for reducing vulnerabilities and enhancing resilience
- Improve linkages among universities working on DRM (teaching, research and community services)

"DRM related Teaching, Research, and Outreach activities of Jijiga University",
Dr. Muhammed Abdella, Jijiga University

I. BACKGROUND

- Jijiga University (JJU) is one of the second generation universities in Ethiopia, established in 2007
- Located in Jijiga City, the capital of Somali regional state
- JJU strives to excel in three pillars:
    - quality education, research, and community engagement
- Number of Academic Programs
    - 47 Undergraduate programs
    - 25 post-graduate programs
- Number of Staffs:
    - 1481 academic staffs
    - 2329 admin and support staffs
- The university has more than 25,000 undergraduate students at present pursuing their studies in regular and CDEP programs
- It has also 1425 postgraduate students in both regular and weekend modalities
- The university is recently classified as an Applied University by MOSHE as part of the differentiation process
- As an applied university, It is expected to specialize in the areas of:
    - Livestock
    - Natural resource management
    - Agro-industry
- **Vision**:
    - JJU aspires to be one of the top five Applied Universities in the country while being a center of excellence in pastoral and agro-pastoral development studies and outreach services in the Horn of Africa in 2030
- **Mission:**
    - Offer quality education in applied disciplines to produce competitive, productive and ethical citizens;
    - Conduct problem solving and demand-driven researches and technology transfers emphasizing on pastoral and agro-pastoral development; and
    - Provide socially meaningful outreach services to constructively contribute to local, national and global sustainable development.
- Being located in a region that experiences frequent disaster events like drought, flood, conflict, livestock disease outbreak etc.
- The university has tried to expand its engagements in DRM related teaching, research and community engagements

II. TEACHING

- The university has launched a **masters program in Disaster Risk Management and Sustainable Development in 2015/16** academic year
- The program is being offered in:
    - Main Campus, Jijiga (regular and weekend programs)
    - Gode (weekend)
    - Hargeisa started in 2019 (in collaboration with the Civil Service Institute of Somaliland)

- It has so far produced more than 300 graduates
- Currently enrolled: 172 students
- The graduates of the program had contributed to fill knowledge gaps in DRM, particularly in the context of Somali region, by doing their theses on areas like:
    - Livelihood and Food Security (options, diversification, determinants…)
    - Drought and poverty (vulnerability, causes, effects, coping strategies, etc.)
    - Climate change and adaptation
    - Early warning systems (Indigenous and modern)
    - Flood disaster
    - Conflict and conflict resolution
    - Gender issues in DRM
    - Land and Resources (degradation, management…)
    - Indigenous knowledge and institutions
    - Displacement (causes, nature, living condition, durable solutions, etc.)
    - Locust invasion
    - Soil and water conservation
    - Sedentarization and so on
- The graduates of the program are making significant contributions by working in government offices like the Disaster Prevention and Preparedness Bureau and NGOs based in the region
- The program has been reviewed in 2020 in collaboration with Cordaid Ethiopia
- Cordaid has also supported the development of an Integrated Risk Management (IRM) manual to be used for training of DRM experts
- The university has also a masters program in Pastoral Development Studies and planning to start a PhD program in the same field in 2022

III. RESEARCH

- The university has sponsored a number of researches by its staffs on the issues of DRM on competitive basis as part of its annual research grants
- DRM and Sustainable Development issues are among the thematic areas covered in staff researches
- The research conducted so far address the **following thematic areas**:
    - Climate Change Risk Management and Coping Strategies
    - Climate-Resilient Pastoral Livelihoods
    - Prosopis Invasion (mapping and development of management strategy)
    - Livestock disease (mapping, risk assessment)
    - Resettlement and Sedentarization (situational analysis, evaluation..)
    - Bird pest management
    - Drought Vulnerability Assessment
    - Food security
    - Modeling of Malaria risk zones
    - Soil erosion assessment
    - Durable solutions for IDPs and Refugees
    - Climate Change Adaptation
    - Conflict and conflict management etc
- **The Institute of Pastoral and Agro-pastoral Development Studies (IPADS)**
    - Conducted more than 20 MEGA Research Projects
    - Implements the Livestock Transformation Project (LTP), in collaboration with the Ministry of Innovation and Technology and SRS Bureau of Innovation and Technology

    - Runs a Master of Science Program in Pastoral Development studies
    - Organized national and international conferences on Pastoralism
    - Established East African Journal of Pastoralism, where articles related to DRM in pastoral and agro-pastoral areas are also published
    - Planning to launch a PhD program in Pastoral Development Studies in 2022
- **The Institute of Migration Studies (IMS)**
    - Local government and the sustainable integration of refugees in Ethiopia: a research project in collaboration the German Development Institute (GDI) in Germany
    - Diaspora engagement for City development supported by the Cities Alliance and SDC and partnered by the Somali region Investment and Diaspora Bureau (SR-IDB)
    - Sustainable education in crisis and Emergency situations (Refugees in the Somali region) funded by NUFFIC and the Orange Knowledge Program. Partners include AAU and Gambella University, Ethiopia and Maastricht University, Netherlands.
- JJU is also implementing
    - the Jigjiga One Health Initiative (JOHI), along term project supported by SDC and being implemented in partnership with Swiss TPH and AHRI
    - the Lowlands Livelihood Resilience Project, a national project supported by the World Bank, in collaboration with the regional Livestock, Crop and Rural Development Bureau

IV. COMMUNITY OUTREACH AND TECHNOLOGY TRANSFER

- The university has provided various outreach services and transferred technologies with the aim to meaningfully enhance the livelihood of the local community
- The community outreach activities mainly included support to the displaced people (psycho-social, health, legal aid etc), interventions aimed at enhancing the adaptive capacity of the pastoralists and agro-pastoralists
- Livestock health assessment and treatment
- Different technologies intended to improve the livelihood of the pastoral and agro-pastoral communities were also tested and transferred to the community

Selected technologies transferred to the community

- Demonstration of low-cost and appropriate drip irrigation system for crop production
- Popularization of Hydroponic Fodder Growing Technology for Drought mitigation in the livestock sector
- On Farm Demonstration of Seed Storage Technology (Metal-Silo)
- Introduction and Popularization of Milk churning Technology for Value Addition in small scale women producers
- Introduction of simple grain harvesting and threshing technologies

V. EXPECTATIONS FROM EU-DRM PROJECT

- The aims of the EU-DRM project are complementary to the priorities of the university
- The university can be an implementing partner and support the regional Disaster Prevention and Preparedness Bureau in the implementation of the project activities

- Among other things, the university can:
    - Support the development of Woreda Contingency Plans and Disaster Profiles and Management Action Plans (WDMAP)
    - Support the harmonization and testing of early warning systems
    - Assist the development of intervention packages to address specific needs arising from climate related shocks and integrate the climate-induced IDPs
    - Provide training to staffs at regional, zonal, woreda and community levels on DRR policies and practices
    - Contribute to regional DRR contingency funds to enhance preparedness and early response

VI. COOPERATION AMONG UNIVERSITIES AND REGIONAL DRM INSTITUTIONS

- Universities can collaborate with each other through:
    - Conducting joint researches on DRM related issues
    - Joint publications
    - Staff and student exchanges
    - Jointly designing and developing tools, methods, guidelines and intervention packages
    - Knowledge management
    - Resource sharing
- Universities and Regional DRM institutions can collaborate in areas of:
    - Capacity building trainings
    - Creating internship arrangements for DRM students
    - Identifying priority areas of intervention through conducting risk and need assessments
    - Development of intervention plans

"Disaster Risk Management Situation Analysis in Agriculture", Dr. Amare Mengiste, UN FAO-ET

I. OVERVIEW OF PROACT (Support the Government of Ethiopia to enhance food security information, national social protection and disaster risk management)

- The outcome of the project is "by 2020, Government institutions and partners are capacitated to better address food security and nutrition needs of vulnerable communities through utilization and strengthening of comprehensive timely and evidence-based early warning systems, and DRM and livelihood innovative solutions
- Duration: 2 Years (Nov 2018 – Oct 2020)
- No cost extension: 8 months, ends June 2021
- It has three components: IPC, Social protection, DRM

IPC

- Institutionalizing and produced 3 IPC reports;
- mainstreaming IPC data collection;
- Undertaken food security & desert locust impact assessments.

SP

- Introduced cash plus packages (cash +inputs);
- Undertaken livelihood effectiveness review of the PSNP and
- PSNP graduation approach reviewed

II. OBJECTIVE

- The objective of the analysis is to better understand the achievements to-date in mainstreaming disaster risk management and the factors affecting its integration within the agriculture sector.
- The study was guided by Key national strategies guiding disaster risk management and climate change adaptation:
  - National Policy and Strategy on Disaster Risk Management
  - Disaster Risk Management Strategic Programme and Investment Framework
  - Climate Resilience Green Economy Strategy
  - Guidelines for Mainstreaming Disaster Risks into Development Planning Processes and Future Investment Decisions

III. METHODOLOGY

- Desk reviews, key informant interviews(KII) and Focus Group Discussions (FGDs) at the Federal and regional level (Oromia and Somali)
- Engaged Crop Development, Agricultural Extension, Climate Change and Environment, Plant Protection, and Planning and Monitoring and Evaluation.
- Discussions were held with the Productive Safety Net Programme, the Sustainable Land Management Programme, the Agriculture Growth Programme, and the Regional Pastoral Livelihood Resilience Programme.
- Consultations were held with the National Disaster Risk Management Commission and with various with non-governmental organizations involved in promoting disaster risk management in the agriculture sector.

IV. KEY FINDINGS

Policy Environment: Existence of strategic policies and procedures including disaster risk management policy and investment framework, DRM mainstreaming guidelines, *Agricultural Policy Implementation Framework, 2010–2020*; *Climate Resilience and Green Economy, 2011*; and *Social Protection, 2012*

- The agriculture sector documents do not consistently articulate the concept of risks, shocks, vulnerable people and environmental sustainability for harmonized and coordinated investments;
- Technical teams within the Ministry of Agriculture, especially at decentralized level, are not fully conversant with the DRM policy landscape and their contribution to its achievement

Governance, coordination and partnership: Disaster risk management governance and coordination structures and mechanisms higher level exist

- Strong in regard to humanitarian response.
- Lack of a coordination entity in MoA to ensure linkages and harmonization within the Ministry and to serve as interlocutor with other government institutions and other stakeholders.

Information management: Early warning information with Integrated Food Security Phase Classification (IPC), Livelihoods Early Assessment and Protection and Livelihood Impact Analysis Sheet is available and facilitate scenario planning

- Links between early warning information and early action are weak;
- Humanitarian response is not fully informed by routinely collected, organized, analysed and monitored early warning information;
- Various resource and capacity gaps;
- Lack modelling, standardizing and forecasting

Planning process for DRM in agriculture: Regular annual work planning cycles anchored at *woreda* and regional levels, linked to federal level, as well as to budgetary resource allocation; availability of *woreda* risk profiles and robust humanitarian response planning process linked to resource mobilization and implementation.

- Disaster and climate change risks not considered in the work planning processes –not accounted in budget and resource allocation.
- Climate change adaptation and disaster risk management are uncoordinated and suboptimal use of woreda disaster risk profiles and disaster risk reduction plans.
- The capacity of technical staff (mainly at federal level) in terms of knowledge and skills on DRR and contingency planning processes is limited.

Disaster risk financing: Existing flagship programmes aimed at protecting communities against climate-related shocks; ability to access Global climate and adaptation fund, contingency planning and funding mechanism and risk transfer initiatives.

- No disaster risk financing strategy to guide sectoral resource mobilization

- Disaster risk transfer parameters and instruments are largely underdeveloped
- Annual workplans within the Ministry of Agriculture have limited disaster risk reduction activities, leading to low levels of resource allocation
- Disaster risk reduction and contingency funding is not fully linked to woreda disaster profiles and trigger mechanisms, and risk thresholds are not consistently articulated

Implementation of disaster risk reduction and resilience investment in agriculture: Availability of funds and sustained implementation of disaster risk reduction and resilience investments through flagship programmes and community participation has enabled piloting and upscaling of good practices and innovation.

- Responsibility for disaster risk management is spread across directorates and programmes using diverse approaches, which leads to fragmentation and lack of synergy.
- Low awareness of disaster risk management on the part of Ministry of Agriculture staff at all levels translates into low uptake of relevant innovations by communities as extension workers are not able to model and champion these innovations.
- DRM-Implementation capacities: The ability to use EW, risk profiles/vulnerability information and design DRR activities (prevention, preparedness, mitigation and recovery) is weak.

Monitoring, Evaluation and Learning: Existence of clear strategic objectives and indicators for the sector articulated in the Growth and Transformation Plan and Monitoring and evaluation capacities within the Ministry of Agriculture's Planning and Programming Directorate.

- There is no comprehensive disaster risk reduction monitoring, evaluation and learning framework within the Ministry of Agriculture except, the Sendai Framework Monitoring System, led by the National Disaster Risk Management Commission

V. KEY FINDINGS

Promote DRM mainstreaming in agriculture sector Planning (strategic and annual work planning) & budgets at federal and regional levels.

- Review annual and multi-year work plans;
- Develop and implement resource mobilization strategy to ensure implementation of DRM and/or integrated DRM/CCA programs (financial, technical and human);
- Identify DRM/CCA indicators and ensure these are embedded in overall AG sector and national monitoring and evaluation framework;
- Develop/update risk profiling/vulnerability analysis, DRR and contingency planning including training tool kit for technical staff in the ministry is recommended.

Develop disaster prevention and readiness systems, including communities' readiness (by strengthening Early Warning-Early action).

- Conduct quick DRM capacity needs assessment (financial, technical, material)
- Strengthen efficient, dependable and technology supported early warning information management system for agriculture tailored to the needs of local communities, farmers and herders (Considering easing data collection, analysis, reporting and dissemination).
- Develop thresholds and region specific indicators (based on few indicators) to formally trigger early action and emergency declarations

- Enhance access to technologies that enhance adaptation and disaster risk reduction capacities(e.g. adaptive seed multiplication, Sustainable agriculture, water harvesting and conservation among others)

VI. RECOMMENDATIONS

Strengthen coordination between disaster risk management and climate change adaptation approaches and frameworks in all programs/policies (federal and regional)

- Harmonize policies and programs overlaps between DRM/CCA/CRGE, and SP/PSNP and create a common programming
- Create strong linkage and coordination with other DRM Coordination forums such as DRMTWG (NDRMC), RED&FS (MoA), CC Technical Steering Committee (MoA), and PSNP Steering Committee (MoA) to ensure that agriculture related DRM activities in the country are well synchronized and coordinated
- Develop clear coordination structures that ensure coherence in approaches, roles, and responsibilities (across CCA/CRGE, DRM and SP/PSNP).

Institutionalizing DRM

- Develop clear coordination structures that ensure coherence in approaches, roles, and responsibilities. Three options provided and recommended that the Climate Change Directorate expand beyond climate change adaptation to include DRM and serve as interlocutor
- Engage highest-level decision makers (Minister level) on the need to mainstream DRM in the sector.
- Need to establish and strengthen (Staffing, training, development of tools and provision of equipment's) the M&E function that is able to feed to knowledge management and advocacy- Directorate of planning and programming

VII. LESSONS LEARNED

- Lead time to attain buy in at the various levels took longer anticipated
- Multiple entry points delayed take off of mainstreaming risk in sectors, a champion or leader
- Acknowledge that mainstreaming processes are highly political
- Climate-related DRM is given low priority in sectoral and line ministries.
- Provide robust, accessible and timely information on the economic returns offered by risk-informed decisions
- compartmentalization of funding streams for DRM and climate change and development, inadequate interest from the private sector, and the paucity of estimates for the costs of mainstreaming
- Unanticipated shocks (COVID-19, Desert Locust) affects operations

"Results of MOA Knowledge Management System Workshop to inform development of PSNP's Climate Smart KMS", Mr. John Riley, Climate Smart Mainstreaming in the PSNP (CSM-PSNP)

I. BACKGROUND

The CSM-PSNP* Technical Assistance - Three Results Areas

- Climate smart approaches and methodologies are mainstreamed into the PSNP (**climate-smart planning and implementation**)
- Enhance institutional and technical implementation and monitoring capacity to respond to climate change risks and opportunities (**Capacity Development**)
- Improve documentation and dissemination of evidence generated through TA support action to support sector dialogue and leverage climate finance (**Knowledge Management**)

CSM-PSNP Technical Assistance nexus with DRM-D

- Integration of DRR and EWS in PSNP bottom-up planning process
    - Through the CBPW&RD Guidelines (embedded CS Protocol)
    - Woreda Watershed & Rangeland Teams
- Inter-TA Coordination for developing synergies
- Sharing Knowledge and Learning

II. SYNTHESIS OF THE DIFFERENT KM SYSTEMS WITHIN THE MOA & BEYOND

- 1.1 Ethiopian Agriculture sector KM current practice

Moa engaged in:

- Policy review of the agriculture sector
- Undertaking comprehensive building at Kality, with a big data centre planned to be established.
- A close working relation established with the Ethiopian space science to use remote sensing for agricultural data capturing & analysis.
- Over 34,000 tablets distributed to Woredas with training provided to DAs on how to use it.
- Gimbichu Woreda is pilot for MOA information management revolution

However, these functions are not yet fully realized due to:

- Limited access to horizontal & vertical knowledge,
- The different KM system within the Ministry uses different platform &
- Lack of a shared KM storage system.

- 1.2 MoA ICT existing Agricultural Digitization projects
    - 14 active sector wide MIS or KM systems in the MoA.
    - Other 6 are under development.

- The agricultural management information system is the biggest & can talk to any other systems within the Ministry.

The Ministry has systems for:

- identification,
- capturing
- creation of data
- sharing, exchange & application of Knowledge
    - portal,
    - e-learning,
    - platform,
    - website,
    - collaboration &
    - enabling environment

However, lacks system for:

- knowledge storage & preservation, and
- data warehouse,

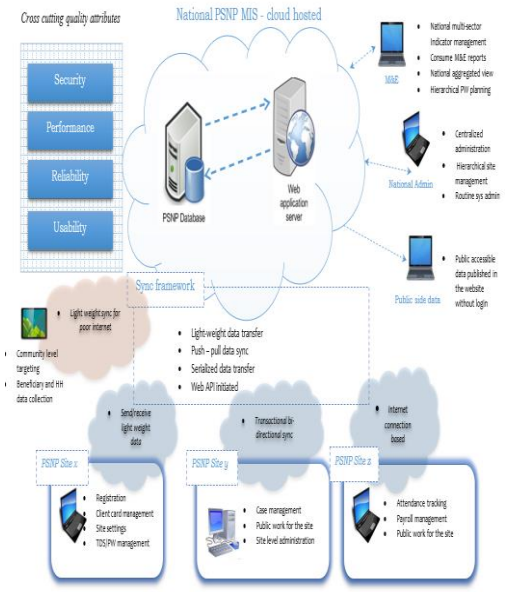
The MoA ICT directorate is working on 7 high level MIS pathways:

- Digital agriculture,
- MoA data centre,
- Harmonization of ICT intervention ,
- ICT strategy & policy,
- Data warehouses,
- Data science to generate unknown knowledge &
- E-learning platform

- <u>1.3 SLMP-MIS/KM System</u>
    - Designed to streamline the process of creating activity plans and reports of achievement through a web-based interface and a centralized database.
    - It creates and maintain:
        - a list of common items that are used by the system
        - administrative boundaries,
        - a list of terms and quantities that are used in the system,
        - a list of major watersheds, micro watersheds, and location specific activities
        - projects with all their structure
        - project plans with an approval workflow
    - Record achievement reports with an approval workflow
    - Generate various types of reports
    - Secure operations through user accounts, roles, permissions, and authorizations
    - Display a graphical interactive dashboard

    The SLMP KM system has additional tools under development
    - the mobile application module,
    - map supported reporting tools & standard document library tagging structure

- <u>1.4. PSNP MIS</u>



- Automation of the existing operations of the programme.
- It is a performance-based monitoring for PSNP5
- The main components of the PSNP MIS are:
    - Policies (governance, data privacy & security, data sharing)
    - People (training, professional development, cooperation, outreach)
    - Data (Client's socio-economic, transfer, public works)
    - Technology (hardware, software, networks, databases, technical implementation plans)
- The PSNP MIS has the following core functions:
    - Manage beneficiary household data throughout the operational cycle
    - Allow users to access program operations data to generate reports
    - Timely management decision-making, supervision, and monitoring.
- * PSNP5 upgrades are under development
- The core PSNP MIS application types are:
    - Web app, PSNP Lite (RPASS +), and
    - Mobile app – for avoiding manual/paper attendance recording and payment tracking at kebele and community levels.
- The system has several interdependency issues to be resolved such as:
    - Woreda connectivity availability
    - installation of IT equipment,
    - Capacity building system integration &
    - Beneficiary House Hold (BHH) registry.

- <u>1.5 PWMDB-IS</u>
    - A spatial & a non-spatial automated system to plan, track/monitor/report public works.
    - It is a map supported tool to record pervious years implemented PW sub-projects with their activities
    - Mapping of newly planned & implemented projects.
    - The system has two components: system development & post system development activities.
    - The system supports the following key futures:
    - Ongoing or planned PW subprojects (location, timeframe, type, number, etc.)

        - PW Planning process (plan approval and rejection, comprehensive plan, planning process)
        - Micro-watershed level information
        - Spatial vs non-spatial
        - Historic data collection
        - Reporting & Dashboard
        - System Administrations
- 1.6 BRE – support
    - It aims to support GoE to deliver transfers to people when they need it through a single GoE system with horizontal and vertical expansion
    - It supports both A Scalable Safety Net in which the PSNP and HFA work together as one effective system
    - Strengthened national DRM system through enhanced capacity of the national disaster risk management commission (NDRMC).
    - In terms of KM, BRE has been assessing the existing & ongoing KM system within MoA, NDRMC & beyond.
    - The idea is to build up on existing & newly envisioned systems instead of re-inventing the wheel.
    - Hence, the project has the following strategic approach to KM for scalable safety net:
    - Select good knowledge management practices globally & regionally that is relevant and applicable to Ethiopia
    - Analyze current knowledge management gaps: identify practical areas that can be consolidated to improve relevance, credibility and timeliness of information collection, analysis and use.
    - Refresh the NDRMC website, including tailored information on COVID-19.
    - BRE is at initial stage of discussion with key stakeholders for the development of MIS system for the shock responsive component of PSNP.

- 1.7 CSM-PSNP KM support

Mandate for CS KMS

EUD ToR for the GCCA+ PSNP CSM-PSNP:

- "Designing and implementing a communication and knowledge strategy, focusing at strengthening engagement of stakeholders towards Climate Smart Agriculture objectives"
- "Promoting a knowledge creation mechanism, fed through the consolidation of field level experiences and existing evidence developed through climate change integration into the PSNP4"
- "The Contractor shall ensure the capitalization and sharing of knowledge related to the implementation of the project."

Types of Knowledge & Management Strategy within a climate smart KM system

- **1/ Current knowledge – from experience, from local people, from technical expertise:** Bottom-up, systematisation and consolidation of local level experiences, evidence and knowledge from PSNP woredas. PSNP technical reports, M&E information, project outputs etc.

- **2/ Imported knowledge – from other places and knowledge systems**: Following a knowledge needs assessment, identify the best knowledge materials available from other sources. Systematise and adapt into accessible, high value knowledge resources for PSNP.
- **3/ New knowledge – to fill gaps once current & imported knowledge systematised. From analysis of information & experience** : Following an analysis of new knowledge needed for climate smart approaches, conduct analysis of information (historic, current, future) available to the PSNP e.g. MIS, weather observation data, etc.

Cont'd.

PSNP5 Outputs, Key Activities and Climate-smart Knowledge Areas

Output #3	Key Activities	Climate-smart knowledge areas
3: Public Works respond to community livelihoods needs and contribute to disaster risk reduction, climate change adaptation and mitigation	i. Develop integrated, climate-smart, gender and nutrition sensitive annual public works plans that contribute to livelihood productivity	i. Resiliency of PWs; CS planning;
	ii. Implement public work plans	ii. CS technical specifications for adaptation & mitigation.
	iii. Monitor the implementation and impact of public works	iii. CS M&E for learning – focus on resilience and mitigation
	iv. Address gender, nutrition and social development issues related to Output 3	iv. Gender analysis for CS outcomes
	v. Develop capacity to deliver Output 3	v. CS-KMS contribution to CD strategy and training material

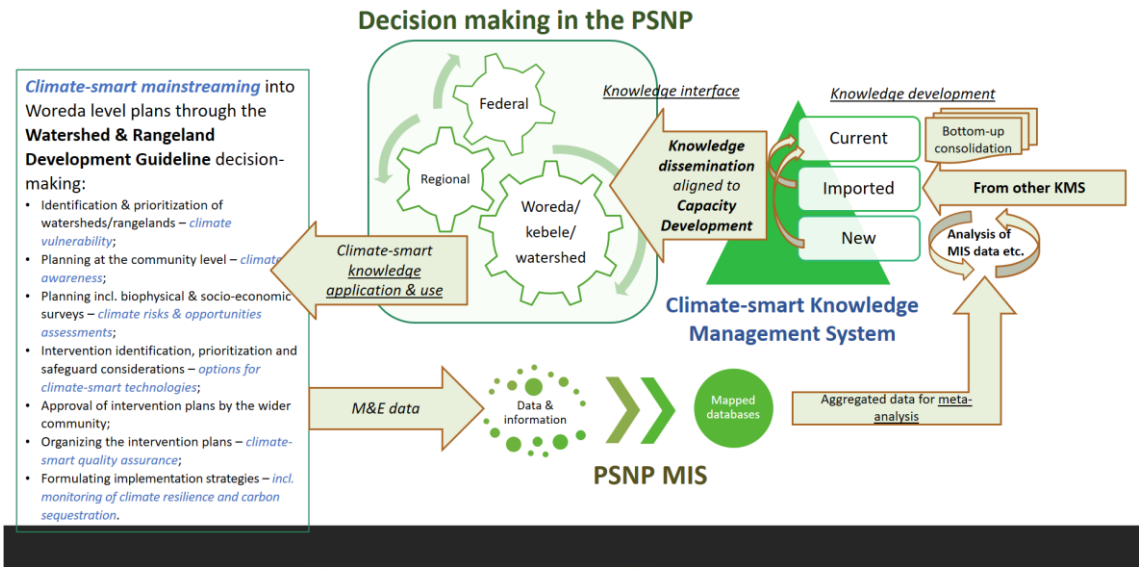
Cont'd.

PSNP5 Outputs, Key Activities and Climate-smart Knowledge Areas

Output #5	Key Activities ======→	Climate-smart knowledge areas
5: Tailored livelihood options accessed by eligible PSNP clients	i. Prepare and plan for livelihoods interventions	i. Evidence of proven CS lhds interventions
	ii. Implement livelihoods interventions	ii. CS ways to implement lhds interventions
	iii. Monitor and evaluate livelihoods interventions	iii. CS M&E for learning
	iv. Develop capacity to deliver Output 5	iv. CS-KMS contribution to CD strategy and training material
	v. Address gender, nutrition and social development issues related to Output 5	v. Gender analysis of CS lhds impacts

Cont'd.

Proposed design of the CS-KMS



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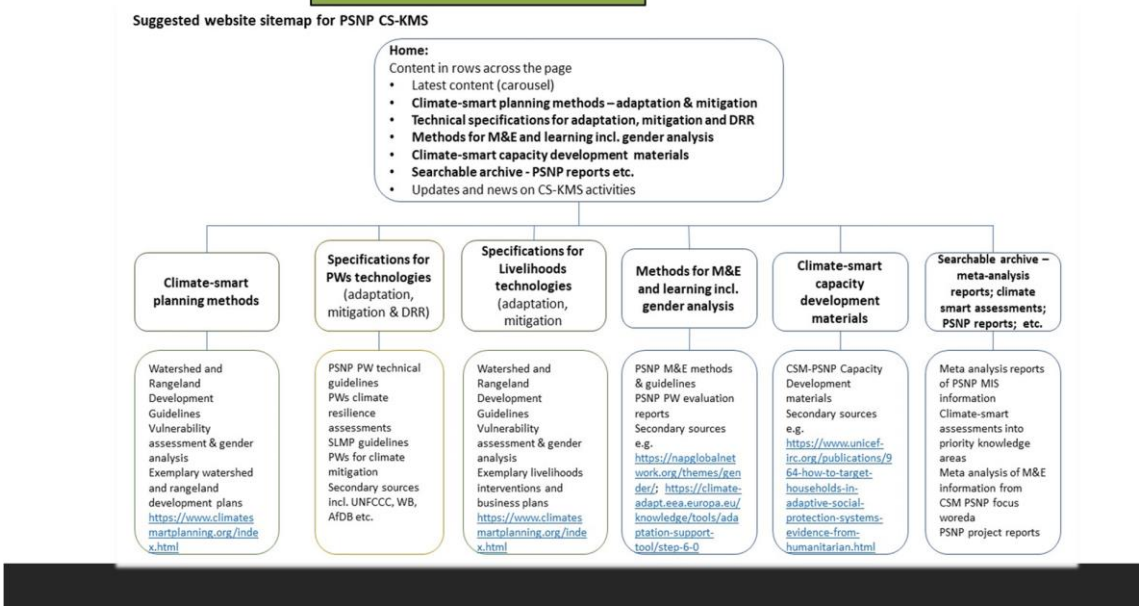

III. CHALLENGES

Many stakeholders at federal, regional and local level generate information, but

- It is scattered, difficult to access within organizations & sectors;
- Technologies are 'scattered 'stored on different platforms, in different formats with a varying level of quality;
- A common platform and procedures are lacking. There is no shared platform for storing and accessing knowledge products;
- As a result, overviews for analysis and selection of knowledge products as policy papers; manuals, information on activities, expertise, projects/programs are time-consuming and of sub-optimal quality in terms of completeness and content;
- There is no culture of knowledge sharing. Reports are usually kept within units or departments;
- Limited Woreda Connectivity
- Limited Capacity of grass roots level implementers such as DAs

- Limited IT equipment

IV. KEY MESSAGES FROM THE WORKSHOP

- There was consensus that MOA should work toward an integrated & harmonized approach of the different systems within the Ministry & beyond
- This could happen through IT regulatory system of the Ministry for systems compatibility & gradual integration of different systems, thus a system of systems with in the MoA.
- IT & the planning directorate should put in place a quality control & assurance system within the MoA
- Grass root level data collection, be it for regular MoA operations or projects, usually depends on DAs who in turn need to be capacitated.
- There is a need to avoid resource duplication through assessing existing & ongoing MIS & KM system within MoA & beyond for possible integration & coordination

There are two options to choose from for a PSNP CS KM system development:

- a project specific KM or
- sector wide KM system.

In the current setting:

- the MOA planning & IT directorate are responsible for the sector wide KM system development,
- while others like specific projects & programmes are developing KM systems for managing data & information and transforming these through analysis into applicable knowledge for activities related to their scope, mandate or operations

V. ADDITIONAL NOTES

- Lack of clear understanding about the differences of MIS & KM systems
- The Ministry cautioned that a sector-wide KM will require ample coordination and cross-department participation. This process has a long-time horizon and has yet been initiated.
- Lack of integration even among similar streamlines; example among projects & programmes working on sustainable land management
- Limited awareness on existence of various MIS & KM system within MoA

Relevant questions and insights about the workshop presentations

Issues raised by chairpersons[1]

- Weakness of the EWS in terms of resources, technical capacity and technology
- The lack of mainstreaming of DRM by sectors as related to disaster occurring in their sectors
- The coordination with leaning institutions is very weak which needs to be strengthened
- Woreda risk profile updating, validation and handing over is delaying. Now 3 woredas have started for SNNPR and will be followed by 18 woredas for Somali region
- Updating the tools, methodologies of WRP
- There has been no linkage between WRP and CF, that is very true which needs further coordination
- The other ministries are not ready to take up and allow NDRMC to support them in mainstreaming effort, rather there appears to be competition over resources
- The PSNP in woredas are not as such linked to the WDRP, even though the PSNP has supported the woreda risk profiling
- Often the ministry of agriculture who is the incumbent of PSNP is only willing to support in response after disaster and not on the activities to be done in pre disaster seasons
- The reform is going in the NDRMC in terms of structure, human power, and the likes. In some of the regions the commission is under agriculture, while in other region office president and in others it is a bureau of its own.
- The need to establish a platform that brings together DRM Universities and the practitioners
- Even though the policy of Ethiopia on DRMC clearly present, mainstreaming is top policy direction, however, what is happening on the ground is very different.
- The need for coordination of the initiative here and there for synergy
- In many of the regions, DRMC offices are not given emphasis and often person with no background are assigned to the office at lower levels of the government structure
- As a follow to FAO's presentation, would love to hear if there is operational level assessment result in terms of mainstreaming in terms of processes, tools, etc
- Why is NDRMC facing coordination challenges?
- I appreciate this platform which is the first its kind to organize on such topics among universities and practitioners
- To my understanding the problem of mainstreaming might emanate from the nature of NDRMC which is multi sector/disciplinary and multi hazard which requires the involvement of many ministries and disciplines
- The urban areas are becoming increasingly vulnerable, which calls for increasing the urban risk profile that was started
- The need to find a striking balance between traditional and conventional early warning system
- Bahir Dar University tried to form the association of DRM professionals, but stopped at some points

[1] Comments collected and compiled by Dr. Gutu Tesso

- Bahir Dar University tries to organize annual conference to build the network across the country
- It is a good news to heart that the DRMC is undergoing structuring, but the question is have you done stakeholder consultation?
- Why no research partnership with sectors apart from mainstreaming and implementation
- The need for review of past research outputs to organize the knowledge in a sharable manner
- What will be the guarantee that the current restructuring would not victimize NDRMC as it happened in the past?
- For mainstreaming the approach might be through national planning commission, councils of ministers or office the prime minster.
- Automation of many of the works done by NDRMC to make work simple
- Of the research issues under discussion, the biggest challenge will be doing problem solving research and getting funds for research

Issues raised by Tadese Bekele, senior adviser NDRMC

Weakness of the EWS in terms of resources

- **University Network & Community of practice**: This platform of universities already started should continue. An official network, association or similar mechanism should be institutionalized to provide sustainability and continuity. Regular communication should be established and a similar workshop to evaluate and to strengthen could happen in 12 months.
- **Repository of Research updated by all universities**: There should be a virtual place where all DRM research is updated and available
- **PSNP and HFA**: The Productive Safety Network Program (PSNP) and the Humanitarian Food Assistance (HFA) are working in siloes. There should be an arrangement to share research and data. Technological solutions to harmonize this integration could also developed.
- **DRM Mainstreaming**: Both legal framework and legal mechanisms for DRM mainstreaming should be strengthened and developed. Universities could support providing research about potential legal frameworks, how to foster enforcement mechanisms and DRM mainstreaming can be more effective in the country. Different dimensions should be explored.
- **Regional DRM institutional and coordination structure**: Currently there is no consistency or uniformity among regions and partners on how the regional mechanisms and structure for coordination work. There are big differences among regions. Universities can provide support with research and consultations on how to empower the regional coordination and structure providing uniformity and same high-level standards.
- **Political will and senior enrolment**: There is a lack of political and senior commitment to move forward the DRM agenda, official structure, policy and mainstreaming. Universities can provide research and consultancy about root causes and how to provide further will, enthusiasm, enrolment and pledge.
- **User-friendly and sustainable access to WDRP and Plans**: WDRP should be skilled up. In particular, further efforts should be provided to build more user-friendly formats and easier use. This is a key aspect that can be also researched by universities.

Additionally, WDRP website and shared platform should be always available. All organizations should be able to access all the WDRP and Plans already prepared.

- **Institutional strengthening for Knowledge Management:**
    - *IT-based support*
    - *Training for further expertise*
    - *Training for specialized agencies* like the Central Statistical Office so they can provide further DRM related outputs. This can also strengthen their role.
    - *Outsourcing*: When things go beyond NDRMC and Regional DRMC capacity, how to outsource KM services to private sector? What can/should it outsourced? What are the strengths of the private sector to strengthen the KM strategy?
- **DRM vs Humanitarian budget**: DRM budget and interventions should be detached from other interventions. Because DRM is currently mainly attached to humanitarian aid projects, and therefore DRM budget and approach is diluted. This should be boldly reflected and highlighted. Further research on how to operationalize the Nexus Agenda in Ethiopia could be developed.
- **DRM Research Funds**: Fundraising strategy and action plan should be developed to be able to mobilize regularly financial resources for DRM Research.
- **DRM Coordination**: Universities can provide research on potential different modalities, capacity strengthening and coordination instruments. Potentially bringing local but also international experiences.
- **Partnerships & collaborations for research:** Formulas for research collaboration should be defined and enhanced, so Universities understand the different possibilities available to collaborate on DRM Research between Universities but also with government and development organizations.
- **DRM Institutional Reform**: Additional support will be needed on the on-going DRM Institutional reform. Sectoral conditions should researched. They should be onboard on their mandate and empowerment exercises.
- **Early Warning System**: Universities can provide research on how to should encompass indigenous knowledge
- **Resource decentralization**: Decentralization on the response should be underlined. Universities can provide further research on best mechanisms to decentralize resources with effectiveness and transparency.
- **Complete repository**: All universities should complete and create a sustainable (creation of the “Research, training and knowledge directorate”)

Knowledge Management & Research: Needs and Priority Areas

FEDERAL LEVEL

Participants: National: NDRMC + ACRM + AA Univ + BDU 1 + FAO + ADPC (Secretariat Marko)

	Knowledge Management needs & gaps **Max 5 items**	**Funds** **(if needed)**	**Human capital/Technical assistance** **(if needed)**	**Technology /Data** **(if needed)**	**Duration** **(Select Sept 21-Aug22 /Sept 22-Aug 23)**
1	Development of guidelines, manuals and tools to support Mainstreaming DRR into relevant Sectors Deliver training 12 sectors (leads)		Technical teams Translators to local languages Workshops to present the mainstreaming tools (validation) – various	Documents Web portal Make accessible to all Soft and hardware's	Sept 21-Aug22
2	Use of media for disaster and Disaster risk Reduction (workshop or conference) communication.(Public awareness activities via mass, social and print media outlets) Includes: Assessment and Mapping of media outlets interested/working in DRM, DRM orientation and familiarization workshops, Developing the content on DRM (interview, drama, etc). Modalities ; Age specific, gender, inclusion.		Technical teams Media experts workshops	As provided from the outlets Specific Disaster communication technologies	
3	Review and digitize all the documents available at NDRMC Includes: systematically review all documents produced by NDRMC and digitize them all so that it would be accessible by interested users, This will also help researchers and practitioners to explore the gaps for their		Establishment/ strengthening of Resource center Strengthening digital library Populating the website/portal Scanner and photocopy machine		Ongoing: By December 2021

	future works		documents		
4	Translation of NDRMC's main documents including policies, strategies, guidelines and tools to local languages (regions)		Translation to five local languages		Sept 21 – August 22
5	Set up and use modern communication mechanisms for emergency broadcast system		Experts; Platform; Partnerships; Presentation; Hardware; Server		Sept 21-Aug 22

	Research thematic Areas **Max 5 items**	**Funds** **(if needed)**	**Human capital/Technical assistance** **(if needed)**	**Technology /Data** **(if needed)**	**Duration** **(Select Sept 21-Aug22 /Sept 22-Aug 23)**
1	Why is NDRMC not effective as a change marker? Includes: sought to explore the challenges and opportunities to make NDRMC more effective and efficient , DRM governance in Ethiopia, Multilevel analysis		Technical and administrative team Validation / reflection workshop	Documents in NDRMC and other related ones	Sept 21-Aug 22
2	Conduct systematic multi-dimensional-multilayered DRM system analysis (federal, regions, sectors, partners) at various levels on: Focuses on the Evolution of disaster risk governance in Ethiopia; considers the following key pillars Enabling environment for DRM (institution set up) Institutional arrangement and integration on DRR to various sectors/Organizational capacity assessment – services: Individual capacity assessment (skill) on knowledge attitude of technical/leadership of DRM related sectors (KAP)		Technical and administrative team Validation / reflection workshop Experts on policy analysis, organizational Multi-disciplinary teams. Lead consultant		Sept 21-Aug 22
3	A systematic literature review of research trends and authorships on DRR and climate change in Ethiopia		Technical and administrative team (national universities)		

	Includes: Publications, dissertations, Thesis, working papers on DRM – to determine progress, key gaps and suggest future DRM research works		Validation / reflection workshop		
4	Mapping & characterization of emerging hazards (technological, geological, conflicts) Application of technology in emerging Hazard Frequency, dynamics, (satellite and other sources at national level) – use of technology and GIS/RS		Technical and administrative team Validation / reflection workshop Experts on policy analysis, organizational Multi-disciplinary teams. Lead consultant experts in GIS/RS Computer programmers		Sept 21-Aug 22

SNNPR REGION

Participants: Regional DRMC + Arbaminch U+ CS PSNP (Secretariat Borja)

	Knowledge Management needs & gaps **Max 5 items**	**Funds** **(if needed)**	**Human capital / Technical assistance** **(if needed)**	**Technology /Data** **(if needed)**	**Duration** **(Select Sept 21-Aug22 /Sept 22-Aug 23)**
Knowledge Management needs & gaps	• Common interface that integrates most important DRM data from the region	YES	YES	YES	Sept 21-Aug22
	• EWS database is not working and currently needs to be done manually. Proper digital functioning should be reestablished. Weredas needs automatic data entry system	YES	YES	YES (wereda level)	Sept 21-Aug22
	• Weredas collect EWS info and send to regions (bottom-up) but they do not receive back any info (feedback, no channels, additional info, predictions, …). Missing info from bottom to top	YES	YES	YES	Sept 21-Aug22
	• Training by Arbaminch University to all experts at the EWS Unit (Data modelling; technology for data collection; ICT; how to handle servers; GIS, GPS & RS	YES (per diem and Logistics)	NO (Academics Arabaminch Univ)	NO	Both
	• Scholarships/Externships for Long-term training	YES	NO	NO	Both
	• Assessments at wereda level to identify what are the main problems that require further research at local level	YES	NO (Arbamich Univ)	NO	Sept 21-Aug22

Research thematic Areas **Max 5 items**
• DRM Mainstreaming application and regulation • Effectiveness of the EWS System (resource gap, etc) • Root causes of flood and landslide (in particular in central zones) – e.g. people cultivating in sloppy areas, shortage of agricultural land… • Soil conservation • Resource degradation and pressure (land, water, biodiversity…) • Biodiversity and pollution in the Arbaminch lake • Research on the community perception of disaster risks in the region, studying first what it was already collected in the WDRP.

SOMALI REGION

Participants: Regional Regional DRMC + Jijiga U + CARE (Secretariat Dr. Tesfaye)

Knowledge Management needs & gaps **Max 5 items**	**Funds** **(if needed)**	**Human capital/Technical assistance** **(if needed)**	**Technology /Data** **(if needed)**	**Duration** **(Select Sept 21-Aug22 /Sept 22-Aug 23)**
• Establishing DRM knowledge repository accessible to the stakeholders • Collecting, storing and sharing reports, assessments and other researches that can inform policy • Developing operational guidelines, manuals and related documents for DRM • Develop IMS for DRM	25000 Euro 12000 Euro 10000 Euro (based on immediate need) 5000 Euro	1 System manager (ICT) DRM IMS consultant 1 Consultant 1 Consultant	Server, softwares, Computers, Internet	Sept 21-Aug 22 Sept 22-Aug 23 Sept 22-Aug 23 Sept 22-Aug 23

Research thematic Areas **Max 5 items**	**Funds** **(if needed)**	**Human capital/Technical assistance** **(if needed)**	**Technology /Data** **(if needed)**	**Duration** **(Select Sept 21-Aug22 /Sept 22-Aug 23)**
• Durable solutions for the IDPS: Options for various categories of IDPs in the Somali region. • Flood risk assessment and early warning in the riverine areas of the Somali region (riverine flash and flash flood). • Impacts of climate changes on the livelihoods of the pastoral and agro pastoral communities in the Somali region • Understanding the drivers and dynamics of conflict (intercommunal and inter-regional) among the pastoral and agro pastoral communities in the Somali region. • Assessing the water potentials for irrigation in the lowland areas	40, 000 Euro 45, 000 40, 000 40, 000	Principal investigators, researchers, data collectors, GIS specialists, Water and Hydraulic engineers, soil engineers, geologist.	GIS and remote sensing technologies, satellite data, Geo-spatial modeling software's. Geo-spatial data layers, geo-physical survey equipment,	Sept 21-Aug22 Sept 21-Aug22 Sept 22-Aug 23 Sept 22-Aug 23

(including drilling test wells) • Assessing, identifying and promoting the indigenous knowledge for Disaster Risk Management	1 M/n Euro 40, 000		Drilling machines	Sept 22-Aug 23 Sept 22-Aug 23

Training and capacity development **Max 5 items**	**Funds** **(if needed)**	**Human capital/Technical assistance** **(if needed)**	**Technology /Data** **(if needed)**	**Duration** **(Select Sept 21-Aug22 /Sept 22-Aug 23)**
• Comprehensive advanced level training on DRM and Climate change • Training on coordination with the humanitarian response at all levels (NDRMC) • Training on existing EW system (LEAP, GIS, etc.) • MEAL and Monitoring for Action using standardized tools and indicators specially on Donor funded projects • GIS for Mapping disaster affected geographical locals (GEO spatial data analysis) • Database management, MIS and Knowledge management		Consultants to develop manuals and deliver ToTs.		Sept 21-Aug22 Sept 21-Aug22 Sept 21-Aug22 Sept 22-Aug 23 Sept 22-Aug 23 Sept 22-Aug 23

AMHARA REGION

Participants: Regional DRMC + BDU (Bahir Dar) (Secretariat Yirgalem)

	Knowledge Management needs & gaps **Max 5 items**	**Funds** **(if needed)**	**Human capital/Technical assistance** **(if needed)**	**Technology /Data** **(if needed)**	**Duration** **(Select Sept 21-Aug22 /Sept 22-Aug 23)**
1	DRM Communication manual development and training	400,000 – 600,000	BDU _IDRMFSS and Journalism	Training aids, Call center demonstration	Sept. 21– Aug.22
2	Establishment of watch & documentation center in strategic areas of the region (3 centers)	3 million	Experienced system administrator Data base and web site designer	Server, internet router, software and others	Sept. 22– Aug. 23
3	PDNA tools development and training	400,000 – 600,000	BDU and NDRMC		Sept.21– Aug. 22
4	Strengthening Regional coordination and communication platform	300, 000-500, 000	BDU and RDRMC		Sept '21– Aug '22 Sept '22- Aug '23
5	Woreda risk profile data analysis and DRR plan write up training	400,000 – 600,000	NDRMC Experts		Sept '21– Aug '22

	Research thematic Areas **Max 5 items**
1	Assessement of DRM knowledge management status in Amhara region ✓ To identified gaps & required interventions of DRM knowledge management is the region
2	DRM information communication and coordination capability analysis ✓ To know the existing information communication and coordination capacity and suggest possible interventions for enhancement
3	Regional DRM orgaization operational system analysis ✓ To evaluate the DRM organizations operational systems performance and suggest possible interventions
4	Systematic review of DRM practice and research in Amhara region ✓ To collect evidences and information documents available in the region and systemic analysis for effective use of available resources
5	Amhara Region Agricultural Risks profilinng ✓ To assess and characterize Agricultural Risks in the region and suggest possible interventions for minimizing the impacts of risk on region agricultural production and productivity

OROMIA REGION

Participants: Regional DRMC + Ambo U + WFP (Secretariat Dr. Gutu)

	Knowledge Management needs & gaps **Max 5 items**	**Funds** **(if needed)**	**Human capital/Technical assistance** **(if needed)**	**Technology /Data** **(if needed)**	**Duration** **(Select Sept 21-Aug22 /Sept 22-Aug 23)**
1	Training and capacity building on Key DRM, CC, information management	X	Numbers Diversity of professional		Until August 22
2	Development & Documentation of best practices , Success stories and experiences	X	Numbers Diversity of professional (Ex writer, photographer, graphic designer		Ongoing
3	Data collection, storage, analysis, interpretation, translation into usable form and sharing	X	Numbers Diversity of professional (ex data clerk, translator, Statistician, social scientist, etc)	Digitalization	Ongoing
4	Communication: Publication, internal learning, sharing and platforms /Forums	X	Numbers Diversity of professional (ex Communication expert, etc)	Web based, digital info dissemination	Ongoing
5	Documentary Film Preparation on EU-activities implementation	X		OBN	2021

Research thematic Areas **Max 5 items**

- Resilience to recurrent drought in lowland areas of Oromia
- Measuring effectiveness of EWS and access to climate information for early response
- Migration and IDPs the why and what to be done
- Decentralization and mainstreaming at what level and how?
- The newly emerging dessert locust impacts, prevention, mitigation, response and transforming to opportunities

FIRST ROUND OF RESEARCH

Research area: Measuring effectiveness of EWS and access to climate information for early response

Research Questions

How effective is the Ethiopian EWS in terms

- Why is often the EWS does not lead to Early response
- What should be changed to ensure effectiveness

Research Process

- System review as related to the information collection, compilation, synthesis and dissemination
- Review of the Structure, technical capacity,
- Assessment of the Technology
- Evaluation of the Frequency of information collection
- Measuring the Robustness and synchronization traditional and conventional
- Compatibilities of the different EWS used by different organizations

RESEARCH

Involvement

- Federal, regional, zonal and even woreda level EW bodies
- Stakeholders: NGOs, UN agencies, etc
- Community who are ultimately vulnerable to disaster risk
- Higher learning institutions
- Etc

Data and information sources

- From primary sources

- From secondary sources

Resources

- Manpower: range of Professionals
- Finance
- Logistics

SIDAMA REGION

Participants: Regional DRMC + Hawassa (Secretariat Ayatam/Manaye)

	Knowledge Management needs & gaps **Max 5 items**	**Funds** **(if needed)**	**Human capital/Technical assistance** **(if needed)**	**Technology /Data** **(if needed)**	**Duration** **(Select Sept 21-Aug22 /Sept 22-Aug 23)**
1	Data base management and use for DRM system in 10 woredas of Sidama Region.	1,000,000	Software engineer, Network administrator Statistician ICT expert.	Federal early warning data base Geo-spatial data	October2021-February2021
2	Capacity Building Training on Early warning information Dissemination and communication for Woreda level relevant experts.	1,000,000	Communication expert	Mereology data GIS data	March2022- May,2022
3	Training on Application of GIS and Remote sensing technology for DRM.	500,000	GIS experts	Manual preparation. Technical assistant. GIS Software, computer lab, Digital elevation model, Satellite image	June2022-July2022
4	1.4. Training on DRM Planning, Implementation, Monitoring and Evaluation Techniques.	300,000	Experts of agro-metreology DRM Expert Planning expert	-Manual preparation how to mainstream DRM issues in annual sectorial plan.	August2022-October
5	1.5. Demonstration and Scaling-up of Community Based enset-Bacterial Wilt Disease prevention and control practices.	500,000	- Experts of plant pathology	Manual Preparation	November2022-January2022.

Research thematic Areas

Max 5 items

1. DRM Institutional Situation Analysis, Challenges and Gaps in Sidama Region.

- Little is known about the Sidama Regional DRM due to its recent establishment.
- Profiling the institutional situation would help to take appropriate and context specific measure to strengthen the regional DRM

2. Assessment of Knowledge, Attitude and Perceptions of the community towards Disaster and DRM.

- To comprehend how the community understand disaster and the responses related to it.
- To find the easiest way to reach and effectively communicate the community as per their level,

3. Identification, Documentation and Integration of Indigenous Early warning Knowledge/practices/ with the conventional DRM system.

- Finding types and the manner of indigenous EWS among the Sidama community
- Presence of diverse cultural disaster response practice among the society. So that understanding it would help to use their potentials
- Strengthening the conventional early warning systems through integrating indigenous one.
- Tool for resilience building

4. Mapping Irrigation Potential of the region to Improve the Drought Adaptation Capacity of the Region.

- Drought is the major causes of disaster followed by Pest & disease, flood, and market other shocks to list some.
- 60% of its woreda are drought prone and food insecure woreda
- So important to build resilient agri-food system and resilient community by large.

5. The Nexus of Urbanization, Disaster Vulnerability and Livelihood Depletion in Sidama Region.

- Rapid urbanization and unplanned urban expansion becoming a new phenomenon in the region which adversely affect the lives of the surrounding community.
- Understanding the context in its infant stage would help to take appropriate responses
- Rural-to-urban migration adversely affecting both the communities.

Way forward

- Validate the workshop report with all the presentations developed during this workshop
- Validate the executive summary of the workshop, which the main highlights and recommendations
- Validate the information with the regions, NDRMC and main academic partners
- Prepare a funding proposal and action plan
- Implement the plan for new new partnerships, alliances and potential projects
- Forming a network or community of practice including the participants of the workshop and potentially other partners, in order to share research, best practices and establish regular communication
- Organize a workshop to follow up results, expanding to other regional international universities