

# PROCEEDINGS



DREAM ASAL 2019 Conference

## DREAM ASAL CONFERENCE

29 September – 3 October 2019, Semera

Development of Resilience Empowering Measures  
for Ethiopian Lowlands





**DREAM ASAL 2019 Conference**

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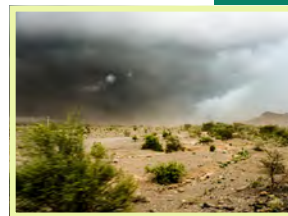
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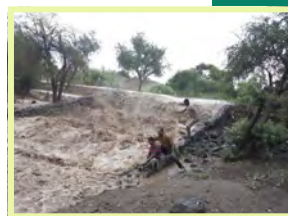
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## **DECLARATION**

**DREAM ASAL Conference, Semera, Ethiopia, October 3rd, 2019**

### **Development of Resilience Empowering Measures for Ethiopian Lowlands**

We, the participants of the DREAM conference, hereby pledge our commitment to meeting the following goals:

- To provide the technical and/or financial resources directly or indirectly through programming to develop innovative opportunities and context-specific approaches realising the potential of the lowlands,
- To pilot and test these opportunities and approaches improving the livelihoods of pastoral and agro-pastoral communities, while strengthening their resilience to climate change,
- To further develop existing holistic approaches for Dry Valley Rehabilitation and Productive Use,
- To communicate, network and bring on-board all stakeholders acting in the lowlands relevant to the activities described in the document.

We as stakeholders are committed to the attached action plan and to coordinate our activities with the pastoral and agro-pastoral communities. To achieve this goal, we will closely collaborate by interlinking our efforts from the ground to policy level and across the concerned sectors.

The scope of our interventions covers:

- Participatory Planning,
- Biological and Physical Land Rehabilitation,
- Rangeland Management,
- Livelihoods Development,
- Water Supply, Sanitation and Hygiene,
- Disaster Risk Management,
- and Capacity Development.



Accordingly, we are dedicated to the action plan that is part of this declaration. We agree to set it into practice with defined actions, milestones, deadlines and designated persons and institutional responsibilities for each action.

The results and the success of the implementation of this action plan will be presented in the 2nd DREAM conference to be held 20th – 25th September 2020 in Jijiga, Ethiopia.

**USAID, GIZ SDR , AfDB through DRSLP, IFAD, FAO**

**BoLAND, BoW, BoCooperatives, Afar Region,**

**BoANRD and BoLPD Somali Region, MoA with the Sectors of NRM and PSNP; Livestock and Fisheries University of Mekelle, University of Samara, University Jijiga, APARI, ICRISAT, CIMMYT, Adadale Poly Technic College, Gewane ATVET**



## INTRODUCTION

The DREAM ASAL 2019 Conference was organised in Semera, Ethiopia between September 29 and October 03, 2019. Organized jointly by the Ethiopian Ministry of Agriculture and the Afar Bureau of Livestock, Agriculture and Natural Resource Development and the GIZ SDR Support Programme, the conference took stock of the most promising approaches in the arid and semi-arid lowlands of Ethiopia and the Horn of Africa and created the basis for networking and cooperation. The Main Conference consisted of an Excursion and the two main conference days. It was preceded by a Regional Pre-Conference on the Challenge of Invasive Species – reported on separately.

It hosted a large and diverse number of participants: pastoralists and agro-pastoralists from Afar, Somali Region and Oromyia, decision makers, international development partners, governmental implementers, civil society experts, researchers, and others. All in all, 254 participants registered for the main conference and 227 for the pre-conference. There was a lively and vibrant attendance throughout. A main outcome of the conference was the Declaration – signed by main government organizations and development partners and endorsed by all participants in the conference.

The Action Plans as in this document complement the Declaration on the Development of Resilience Enhancing Measures in Ethiopian Lowlands.

In the coming months work is undertaken on these Action Plans in the run up to the Second Conference, planned to take place from 20-24 September 2020 in Jijiga. The theme for the Second Conference will be the joint programming of activities for the arid and semi-arid lowlands. The Third Conference in 2021 will discuss the upscaling of programmes for the lowlands.







# **DREAM CONFERENCE**

**DEVELOPMENT OF RESILIENCE EMPOWERING MEASURES FOR ETHIOPIAN LOWLANDS**



*“The dry lowland regions in Africa are often among the least developed areas, as it is the case at the Horn of Africa and Ethiopia. Current projections of renowned research institutions such as the Potsdam Climate Institute indicate additional hazards and ecological changes which already started to harm the scarce socio-economic resource base in such areas.*

*Terrestrial ecosystems, from agricultural land to forests, degrade at alarming rates. Ecosystem degradation undermines food security and reduces communities’ capacities to adapt to climate change.*

*We need to develop an Integrated Lowland Approach allowing quick wins as well as mid-term and long-term development. Starting point is NRM and using untapped resources like floods.*

*The government of Ethiopia has clear policy and strategy in place concerning natural resources management to avoid and reverse landscape degradation and thereby sustainably improve food security and improve ecosystems.*

*The Ministry of Agriculture wishes to develop the capacities of the Ethiopian lowlands. Moreover, the lowlands are among the Ethiopian regions with the largest economic growth potential for the future and could contribute considerably to the national GDP. In order to utilize the existing potentials, the Ministry of Agriculture recognizes and is working to enhance and develop the human and institutional capacities at all levels”*

**HE Dr Kaba Urgessa – State Minister of Agriculture**



## The DREAM ASAL Conference

The main DREAM ASAL Conference - organized by the Ministry of Agriculture, the Federal Government of Afar and by GIZ SDR, took place on 2 and 3 October 2019 in Semera, Afar. It was attended by 254 participants: community members, staff of local, regional and federal government, academics, international experts, staff from development partners and from non-governmental organizations. The Conference was meant to take stock of the most promising approaches on lowland development, hence it was preceded by a DREAM excursion and the Preconference on the Management and Utilization of Invasive Species. The DREAM ASAL Conference also had a Market Place of Opportunities as an integral part.



At the start of the conference, the participants were welcomed by Dr Elisabeth van den Akker, the Programme Manager of the GIZ Strengthening Drought Resilience Programme (GIZ SDR). She emphasized the need for a serious approach to lowland development – bringing together the many stakeholders with the various experiences. She explained that the aim of the DREAM Conference was to understand the most promising approaches and to build connections and networks. In the coming years two more conferences will take place that will respectively aim at joint programming and at scaling lowland development approaches.

The participants were then welcomed to Afar by Mohammed Hussein, Head of Afar Bureau of Land Agriculture and Natural Resource Development (BOLAND Afar). He explained the different challenges in Afar – ranging from large pressure on existing land and water resources to climate change, but also emphasized the opportunities to make better use of the lowland resources of Afar, create local jobs and good livelihood opportunities and in general have Afar contribute to the overall economy.

The conference was then opened by HE Dr Kaba Urgessa – State Minister of Agriculture. His Excellency underlined the importance of the lowlands as the area of major future potential. What is required is an Integrated Lowland Approach with actions for the immediate future as well as coordinated programmes for mid-term and long-term development. The point of departure would be the better use of the natural resources in the lowlands. His Excellency welcomed the joint learning on what works best for the lowlands, as could take place in this conference. He emphasized the need for action plans that would be seriously taken further after the Conference.

Following these openings all participants were invited to close their eyes and dream on the dry lowlands – and imagine their vision. The participants were next requested to post their dream as it related to a key theme of lowland development.

These visions were subsequently worked out in five working groups. At the same time the community members convened to discuss the opportunities and way forward for the lowlands in a separate Pastoralist Community Convention. Discussion in the working groups and in the Convention was



vibrant and full of energy. Each group discussed the Opportunities and Risks related to the theme concerned as well as the Way Forward. These outcomes were presented at the end of the first day. HE Dr Kawa welcomed the evolving action plans from the conference and declared the intention to have the plans formally endorsed.

The second day of the main DREAM ASAL conference started with a Market Place of Opportunities. Here different organizations showcased their solutions including UNICEF, GIZ SDR on behalf of the German Development Cooperation, APDA, ICRISAT, CIAT, Flood Based Livelihoods Network Foundation, Roads for Water Alliance. Working group participants and

members used these occasions to enrich the discussion in their Working Groups. The Working Groups then discussed the Action Plans— with clear time schedules and ownership, based on the identified Ways Forward of the day earlier.

These action plans were presented to a Panel with representatives of the Ministry of Agriculture, GIZ SDR, IFAD, USAID and the Regional Government, who each reflected on the plans and the opportunities. These main partners took the lead in signing the Joint Declaration, setting the stage for coordinated action on different components of arid and semi-arid lowland development. Subsequently, the Declaration was signed by all participants.



## DREAM CONFERENCE DAY 1 SCHEDULE: WEDNESDAY, OCTOBER 2ND, 2019

Time	Activity
09:00 - 10:00	Registration and coffee, participants arriving from Addis Abeba
10:00 - 11.15	<b>Dreams for the Arid Lowlands</b> Dr. Elisabeth van den Akker, GIZ SDR Mohammed Hussein, Head BOLAND Afar HE Dr Kaba Urgessa – State Minister of Agriculture
11.15 - 11.30	Coffee break
11:30 - 12:30	Introduction to conference by moderators: objective and programme Reporting back from the Preconference on Invasive Species Reporting back from the DREAM Excursion DREAM mapping exercise
12:30 - 14:00	Lunch and midday break
14:00 - 14:15	Introduction to Working Group Sessions and Community Exchange Council
14:15 - 16.15	<b>Taking Stock</b> Working groups on five themes <ol style="list-style-type: none"> <li>1. Participatory planning</li> <li>2. Land rehabilitation</li> <li>3. Rangeland improvement</li> <li>4. Livelihood improvement</li> <li>5. Water supply and disaster risk reduction</li> </ol> <b>Parallel:</b> Pastoralist Community Convention Meeting
16.15 - 17.00	Reporting back from: <ul style="list-style-type: none"> <li>• Pastoralist Community Convention</li> <li>• Working Groups</li> </ul>
20.00 - 2200	Dryland Film Festival



## DREAM CONFERENCE DAY 2 SCHEDULE: THURSDAY, OCTOBER 3RD, 2019

Time	Activity
08:00 - 09:00	<b>Checking in</b> Opening of market place
09:00 - 10:00	<b>Market place of solutions</b> Search for solutions at the market place Feedback from the exhibitors
10:00 - 12:30	<b>Identifying most promising actions</b> Working Groups and Community Exchange Meeting reconvene: Identifying action and next steps
12:30 - 14:00	Lunch
14:00 - 17:00	<b>Building a network for next actions</b> Presentations from the Community Exchange and Working Groups Panel reflecting on suggested direction and steps Plenary discussion Reading and signing of Declaration
18:30 - 2100	Dinner and cultural show



## THE DREAM EXCURSION: OCTOBER 1<sup>ST</sup>



The DREAM Excursion took place on October 1<sup>st</sup>. It was a special and blessed day: it rained and had not rained like that in the area for 27 years.

Three journeys were organized and activities of different organizations were visited: GIZ SDR, ICRISAT, the Ministry of Agriculture (DLRSP) and UNICEF.

What was seen:

### 1 ADADALE ATVET COLLEGE:



Training masons in constructing basic water infrastructure, creating new employment opportunities



## 2 AYSAITA FRUIT AND MULTIPURPOSE TREE SEEDLING PRODUCTION



Sourcing crops that are new to Afar: dates, mangoes, oranges and papayas

## 3 AYSAITA MULTI-VILLAGE WATER SCHEME



Connecting five more villages to the Aysaita Town Water Supply, ending water trucking and the use of unsafe sources

## 4 WANASSA SOLAR PUMP



Using solar energy to lift drinking water from large depth – avoiding high energy costs

## 5 TIBIADORA NATURAL FOREST AND FODDER PRODUCTION



Introducing improved coarse grains and fodders

## 6 YALO WOKERIEDA



Dry Stone Measures and Water Spreading Weirs and flood based farming practices.

Diverting flood water from the ephemeral stream, creating productive oases

## 7 ELIDHAR SOIL AND WATER CONSERVATION



Improving large grazing areas

## MARKET PLACE OF OPPORTUNITIES







*The market place of opportunities brought together organizations presenting field activities with the aim to share and set the basis for upscaling: flood water spreading, improved hygiene, better WASH, new crop varieties, small mechanization, rangeland management, Invasive Species Management, water harvesting - including using roads for water, using drones for monitoring. All participants were marking with a sticker the stand they found most inspiring.*



# PREPARING ACTION PLANS

Inspired by the Excursion and enriched by the Market Place, Action Plans were prepared on the following areas:

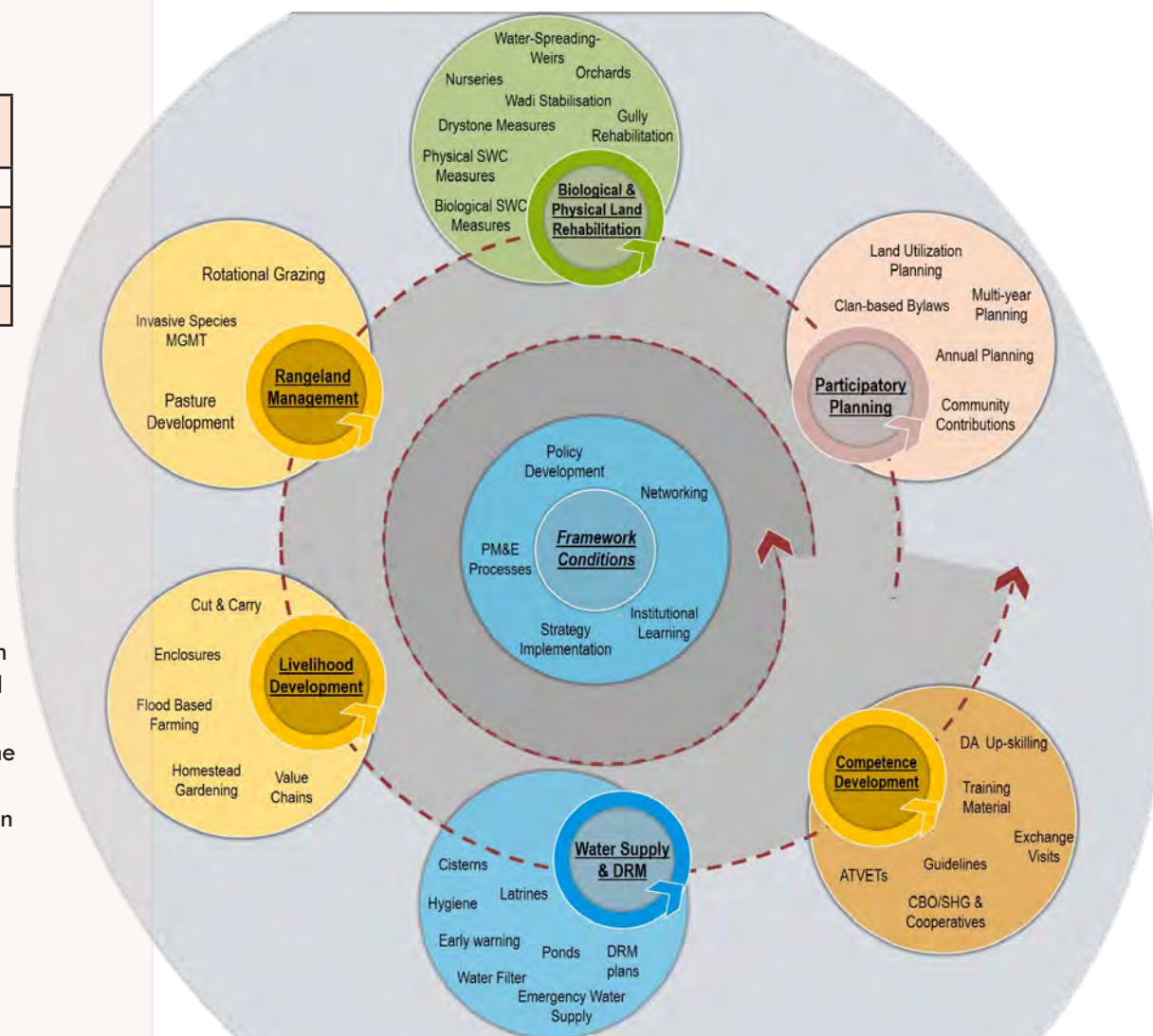
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| 1. Participatory Planning with Pastoral and Agro-Pastoral Communities |
| 2. Biological and Physical Land Rehabilitation                        |
| 3. Rangeland Management   |
| 4. Livelihoods Development  |
| 5. Water Supply and Disaster Risk Management                          |

The discussion themes are based on the following loop. Of the six main topics of this loop competence development was not discussed separately but was mainstreamed into all other five topics. The heart of the loop is networking, learning and policy development. The DREAM conference was very much meant to contribute to this.

The discussion took place in working groups and in plenary discussion. In the working groups the dreams and visions for each of the topics were taken up. First, opportunities and risks related to each of themes were discussed. Based on this a way forward was identified, leading next to action plans, having at least a one year perspective. In the plenary session, the way forward and action plans were presented and feedback was given. The action plans were meant to be as specific as possible.

## Working Groups and Actions Plan

During the DREAM I conference five working groups were established. The action plans of these five working groups fall under the following five themes:







**DREAM ASAL 2019 Conference**

*At the DREAM conference everyone  
'dreamed' and after opening the  
eyes wrote down their vision and  
wish for the lowlands.*







## **THEME 1:**

**PARTICIPATORY PLANNING WITH PASTORAL  
AND AGRO-PASTORAL COMMUNITIES**



**With respect to Participatory Planning with Pastoral and Agro-pastoral communities the following Opportunities and Risks were identified.**

## OPPORTUNITIES

- Government commitment to the development of lowlands
- Experiences with planning practices in different projects operating in the lowlands
- Commitment of development partners in the lowlands
- The availability of water and land: unused potential
- Community demand for change
- Government strategy policy and structure
- The social capital of indigenous knowledge
- Existing pilot projects that apply participatory approach
- The availability of the new woreda planning manual

## RISKS

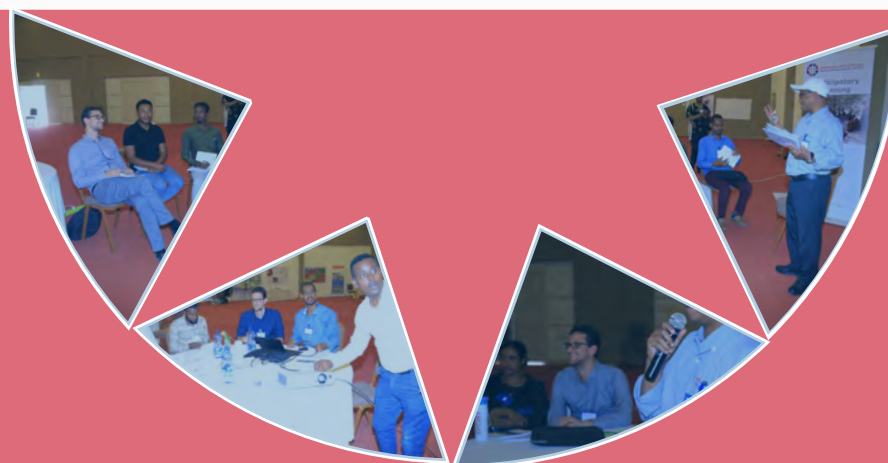
- Unavailability of a strategy of standardized planning at village level
- Existing practice is not backed by technology like GIS
- Duplication of effort by various projects
- Limited technical expertise at ground level
- Lack of organized database
- Lack of inclusivity (cultural barriers)
- Turnover of development agents and experts
- Policy gaps with respect to pastoralism

- Change in priorities by Government
- Poor infrastructure esp. transport

## WAY FORWARD

**The understanding of the opportunities and risks lead to the following way forward:**

- Development of standardized / planning manual and tool for lowland area
- Linking planning with technologies like QGIS
- Development of platform/networking among various development partners at all level
- Planning through participation and inclusion of stakeholders
- Capacity development for local service providers
- Design appropriate programme handing over and exit strategy
- Documentation and sharing best practice
- Ensuring complementarity among the various development partners.

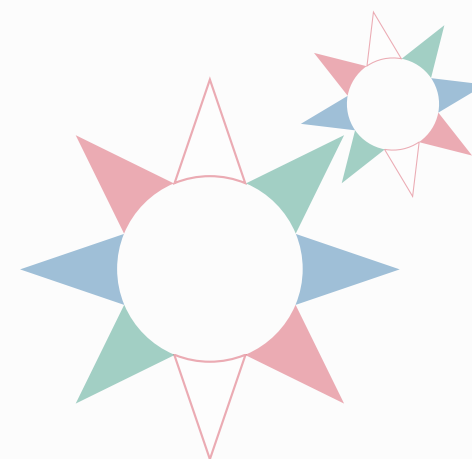


## ACTION PLAN 1: PARTICIPATORY PLANNING WITH PASTORAL AND AGRO-PASTORAL COMMUNITIES

Actions Plan: Participatory Planning				
No.	Activities	Expected Output	Deadline of Implementation	Responsible Partners
1	Second session of working group	Final action plan, clear roles and responsibilities	November 2019	---
2	Knowledge exchange on PP to improve field guide (National/regional)	Harmonized knowledge for the working group, responsible departments and decision makers	February 2020	MoA; BoFED; GIZ SDR; MoP; BoLAND; Pastoral Area Development Coordination Commission and other
3	Available basic data collection	HH data collected	February 2020	Regional and Woreda institutions
4	Finalization of PP guideline manual for lowlands	Participatory planning guideline manual developed	March 2020	MoA; GIZ SDR; Federal Planning Commission; MoP; BoLAND; Pastoral Area Development Coordination Commission; Mekelle University
5	Conducting awareness raising on PP events at community level	Mobilized community members	March 2020	Regional and Woreda institutions
6	Providing trainings on PP for CBO's	1000 skilled CBO members	March 2020	Regional and Woreda institutions
7	Conducting Knowledge and skill training for testing PP manual with local service providers on the job	Draft manual tested & skilled service provider	March – April 2020	MoA; GIZ SDR; MoP; BoLAND; Pastoral Area Development Coordination Commission and other relevant actors; Mekelle University



Actions Plan: Participatory Planning				
No.	Activities	Expected Output	Deadline of Implementation	Responsible Partners
8	Getting approval of community activity plan by Woreda cabinet	Community approved the plan	April 2020	Regional and Woreda institutions
9	Summarize results from PP process (problems & priority lists & plans)	Organized data available for stakeholders	May 2020	Regional and Woreda institutions
10	Organizing Experience Sharing events (Woreda/communities)	Best practices shared, and common understanding created at woreda/community level	September 2020	Federal, Regional and Woreda institutions
11	Presenting the PP manual to decision makers during DREAM Conference in Jijiga	Approval of the product	November 2020	Regional and Woreda institutions
12	Joint monitoring of working group action plan	Implemented activities	Ongoing until end of 2020	All stakeholders





An aerial photograph of a river system. A central river flows from the top towards the bottom, where it is impeded by a dam structure with several rectangular basins. The riverbanks are heavily vegetated with green trees and shrubs. To the right of the main river, there are several smaller, branching channels or floodplains, some of which appear to be dry or have very shallow water, showing a mix of green vegetation and brownish soil. The overall scene suggests a focus on water management and land rehabilitation.

## **THEME 2:**

**BIOLOGICAL AND PHYSICAL LAND  
REHABILITATION**



**With respect to Land Rehabilitation the following Opportunities and Risks were identified.**

## OPPORTUNITIES

- Local knowledge
- Available skilled man power (trained masons )
- Plain /flat arable land
- Available labor
- Flood water
- Access to water as result of WSW
- Easy access to construction material
- High willingness interest and awareness on the need for conservation
- High motivation of newly appointed government staff
- Increased political understanding and willingness to utilize lowland resource
- Development partners that are interested to contribute to lowland conservation and development

## RISKS

- Erosion and gully formation
- Uncontrolled floods
- Reduced vegetation cover
- Reduced land production

- Increased food insecurity
- Increasing livestock population and overgrazing
- Limited skill to utilize ground water
- Livestock disease (opportunistic diseases)
- Climatic change: change in rainfall pattern, intensity, timing, variability, reliability
- Water shortage and recurrent drought

## WAY FORWARD

**Based on these opportunities and risks the main ways forward for land rehabilitation were identified:**

- Develop and contribute to a land rehabilitation platform
- Promote mind set changes and spread knowledge on floodwater spreading, increasing soil fertility, improved agroforestry
- Document indigenous knowledge
- Address different knowledge levels: community, experts and policy makers
- Create a core group of knowledge holders, including traditional institutions
- Use common and local language
- Establish guideline and peer review mechanism

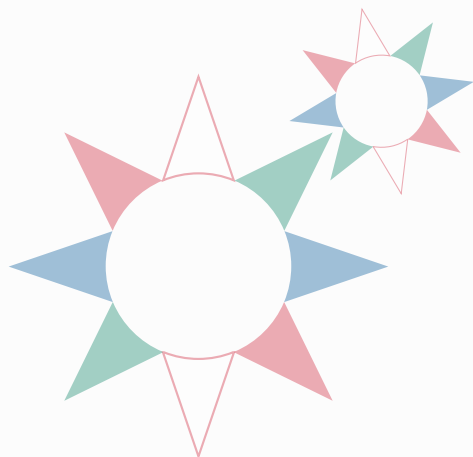


## ACTION PLAN 2: BIOLOGICAL AND PHYSICAL LAND REHABILITATION

Actions Plan: Biological and Physical Land Rehabilitation				
No.	Activities	Expected Output	Deadline of Implementation	Responsible Partners
1	Development of land rehabilitation platform	----	----	MoA, BoLAND (Afar), BoPRD (Somali), Research Institutes (APARI, SoRPARI), Universities (Mekelle, Semera, Jigjiga), PADO, GIZ SDR, BDA, AFDESE, ICRISAT
2	Core group establishment	Focal persons nominated by each of listed institutions	January 2020	
3	Coordinated work of core group	A platform structure is set up and suitable access modalities and rights are implemented		
4	Selection of watersheds	2 watersheds from two regions ready for activities	January 2020	
5	Selection of actors and capacity building	Local actors selected for capacity building		
6	Development of guideline and documentary requirements, testing	Guidelines for population and peer review mechanisms available, local language and translation requirements are considered	February 2020	
7	Actors plan watershed	Plan of appropriate technologies and design developed	15th February 2020	
8	Information collection	Practical land rehabilitation know-how for the lowlands gathered	February – April 2020	
9	Implementation	Designed technologies implemented	March 2020	



Actions Plan: Biological and Physical Land Rehabilitation				
No.	Activities	Expected Output	Deadline of Implementation	Responsible Partners
10	Review period	Monitoring and feedback loops for information pull and usage are in place	April – September 2020	MoA, BoLAND (Afar), BoPRD (Somali), Research Institutes (APARI, SoRPARI), Universities (Mekelle, Semera, Jigjiga), PADO, GIZ SDR, BDA, AFDESE, ICRISAT
11	Cascade planning tools and guidelines on community based participatory watershed and rangeland development	----	----	
12	Monitoring and evaluation	Designed technologies evaluated	April – August 2020	
13	Development guideline	Guideline verified and edited	September 2020	







## **THEME 3:**

### **RANGELAND MANAGEMENT**



With respect to Rangeland Management the following Opportunities and Risks were identified.

## OPPORTUNITIES

- Availability of Prosopis and other weeds in Afar that can be used productively
- Floods as a source of water for the rangelands, if properly managed
- High livestock population and high livestock density - allows better management and holistic grazing\*.
- Land use change - both a threat and an opportunity..
- Availability of large area of rangeland resources: water, wild life and vegetation cover
- Diversity of the plants
- Traditional management system - customary institutions, knowledge and practices
- Availability of the support of international and national NGOs working on rangeland management,
- Communal asset building in the area of forest development
- Commercial reforestation/productive forestry
- Policy development/policy gap at present
- Industries with an interest to produce energy from the dryland biomass
- Local willingness to improve rangeland: community initiative, consensus and perception for change
- Pastoral development management policy under preparation

## RISKS FOR RANGELAND DEVELOPMENT

- Drought
- Encroachment by invasive species
- Pests including desert locust
- Lack of coordination among actors
- Conflict
- Expansion of commercial agricultural estates
- Privatization of communal grazing land
- Uncertain land tenure
- Settlement in fragile ecosystems/ growing tendency of sedentary farming
- Free rider problem, uncontrolled grazing/open grazing by others not working on land development
- Use of trees for enclosures
- Disrupted mobility routes
- Extraction of valuable tree species for charcoal making
- Erosion
- Absence of rangeland management policy
- Inadequate involvement of the community
- Low participation of women in natural resource management governance

\* Holistic grazing is a system of rangeland management, developed by the team of Alan Savoury, whereby an area is intensely grazed for a short duration – in order to remove all species (not only palatable species), to break the soil crusts (so to better absorb rainfall and run-off) and to concentrate animal dung – all of which to restore grazing grounds.

## WAY FORWARD

**This assessment of the Opportunities and Risks led to the identification of the following Way Forward**

- Adopt rotational grazing
- Scale up existing good practice for instance in solar energy
- Implement relevant soil-water-conservation measures
- Strengthen customary institutions on rangeland management

The already identified way forward actions are merged and prioritized. The actions are headed under three outcomes:

1. Develop, implement and monitor participatory rangeland management
2. Knowledge management: applied research & indigenous knowledge
3. Ensure effective multi-stakeholder coordination, for policy and strategy development.





## ACTION PLAN 3: RANGELAND REHABILITATION

Actions Plan: Rangeland Rehabilitation					
No.	Activities	Expected Output	Deadline of Implementation	Lead organization	Organization involved
1	Reach consensus on PRM Planning Process in line with Woreda Participatory Land use planning in Pastoral and Agro-pastoral Areas (WPLUP Manual)	PRM plans developed for demarcated rangelands in 3 Woredas	April 2020	BoLAND international and bilateral organizations and NGOs	Universities and regional research institutes
	Build capacities how to carry out PRM in line with WPLUP Manual through consultants or NGOs		July 2020		
2	Draft plans PRM for selected demarcated rangeland areas in cooperation with communities (consultants or NGOs)		October 2020		
3	Endorse PRM plans in cooperation with communities		December 2020		
4	Rangeland Management implemented and practiced	Customary rangeland institutions revitalized and strengthened in 3 woredas	April 2021	BoLAND	Community, DA local government, DA BoLAND, international & bilateral and NGOs
5	Sign agreement with industries and feed processors	Industrial level invasive species utilization started in 3 woredas	April 2020	BoLAND, Bilateral Programs and NGOs	Cement factories, BoLAND, international & Bilateral and NGOs, Feed processors, CBO
6	Start Investment		October 2020		





## **THEME 4:**

**LIVELIHOODS DEVELOPMENT**



With respect to Livelihoods Improvement in Arid and Semi Arid Lowlands the following Opportunities and Risks were identified

## OPPORTUNITIES

- Availability of the resource base (manpower, water, land, livestock)
- Existence of governmental structures
- Conducive existing policies; both federal and regional
- Increasing interest of development partners

## RISKS AND CONSTRAINTS

- Climate change and variability
- Limited capacity
- Unfavorable policy for pastoralists
- Conflict
- Invasive species
- Limited social services
- Disease outbreak
- Commitment
- Funding



## WAY FORWARD

On the basis of this analysis the following Strategic Investment Areas and way forwards were identified:

- Promoting pastoralists adaptation strategy (dryland fodder, dryland crops, NRM, water, Institutions)
- Enhancing capacity, participation and ownership of target communities at scale
- Integration and collaboration among various actors
- Developing strategies for controlling invasive species to economic benefits
- Appropriate water resources development in pastoral and agropastoral systems
- Improve access to social services, e.g. human and animal health
- Document best practices



## ACTION PLAN 4: LIVELIHOOD DEVELOPMENT

Actions Plan: Livelihood Development				
No.	Activities	Expected Output	Deadline of Implementation	Organizations involved
1	Preparation of terms of reference for the recruitment of a consultant specialized in livelihood development	10-years-strategy and 5 years action planning on how transforming livelihoods in the lowlands, focusing on food and nutrition security, increasing household incomes, diversify livelihoods, Social services, inclusiveness and gender, resilience of lowland systems.	January 2020	ICRISAT, SDR, IFAD, USAID, MOA Oromia Pas Commission, BOLAND, Somali Livestock and NRM, FSA, ACPA
2	Selection of a consultant for conducting the study of livelihood development		February 2020	
3	Preparation for the planned study		March 2020	
4	Workshop 1: Discussion on parameters, planned activities, methodologies and the way forward		March 2020	
5	Field work in the selected woredas in order to conduct the assessment		March – May 2020	
6	Draft report of the assessment		May – July 2020	
7	Workshop 2: Summary of data collected, assessment and draft report presentation		August 2020	
8	Finalizing and submitting the report		August 2020	





Existing customary laws in pastoral systems  
- Policies / Federal regional dynamics...  
- Interest & developmental priorities  
- Branding & Costs  
- Access to local / international market and financial institutions  
BU

Limited access to Social Services  
- Disaster Outbreak (human & Animals)  
- Shrinkage & loss (availability, or presence)  
- Poor coordination between actors  
- Lack of ownership / leadership



Lots of water point developed

## THEME 5:

### WATER SUPPLY AND DISASTER RISK MANAGEMENT





With respect to Livelihoods Improvement in Arid and Semi Arid Lowlands the following Opportunities and Risks were identified

## OPPORTUNITIES

- In all most all arid lowland region of Ethiopia (Afar, Somali, South Oromia, and some part of SNNPR) there is the potential to develop sand dams, that may hold water for four months and can serve as a source of drinking water – especially when combined with hand pump installation. Similarly water spreading weirs also replenish shallow groundwater, especially when gullying is avoided
- Deep groundwater mapping will help identify secure and good water quality water sources for dinking water
- Solar energy technology is becoming available and affordable
- Multi actors resources are available
- More use can be made of traditional women innovators (WASH)
- Engagement of clan and religious leaders (WASH)
- Leadership by communities and local government at all levels

## RISKS AND CONSTRAINTS

- There is lack of integration between main stakeholders and partners in WASH. Government policies and community demands are sometimes misaligned.
- Non functionality of existing systems is high due to among others:
  1. Missing spare part.
  2. Inadequate fee collection.

- Resource availability is a main challenge. Climate change and degradation of environment is a risk – it affects the availability of water which is already curtailed by water quality (esp. fluoride and salinity and high temperature), Current drought may result in overuse of water resources.
- Large parts of the lowlands have saline water: well drilling is expensive and may result in a well with unacceptable water quality.
- There is a risk that vulnerable communities will become more vulnerable. Targeting might lead to exclusion. If communities are resettled against their wishes villages may disappear and social cultural shocks be witnessed.
- There is less awareness and knowledge of safe hygiene and sanitation practices at household level. There is less knowledge and practice of using water treatment at household level.
- It Is difficult to engage men and boys in menstrual hygiene management as well as staff of local government.
- Health extension workers and school staff find it hard to engage children due to language barriers and traditions/norms.





## WAY FORWARD

The Working Group on this theme stated that water supply should be a Number One Priority and as such reflected in the budget. It is essential to ensure that water supply is safe and health is safeguarded by including sanitation and hygiene. The following ways forward were identified:

- o **Improve planning and participation**
  - All sectors should integrate to sustain the activities and use resources efficiently
  - Planning should be participatory
  - Adequate planning is required from the securing the source to operating the system and beyond with attention for fee collection
  - Investment in maintenance and human resources is part of the WASH programming
  - There should be more attention for water quality
  - Systematic monitoring should be in-built
- o **More attention for supporting technology – from sand dams to solar pumps or rooftop water harvesting (in cities)**
- o **More attention to the supply chain of spare parts**
- o **The work ethics in the profession may be improved.**
  - In case of sanitation, Afar has the largest distance to travel yet of all regions. Sanitation is also of essence in tourism promotion:
- o **More attention from schools in WASH services and in particular in defecation free campaigns and hygiene promotion**
- o **Make use of local material (like Prosopis) to construct latrines**
- o **More attention to improve hand washing behavior**

All these to be supported by practical capacity development for regional water bureaus and NGOs in for instance new borehole development, solar energy and biogas.









## ACTION PLAN 5: WATER SUPPLY AND DISASTER RISK MANAGEMENT

Actions Plan: Water and Solar Hub (WASH+)						
No.	Activities	Expected Output	Deadline of Implementation	Actors - owners	Actors - collaborators	Actors - responsibility by
1	Establish WASH+ Action Group	Action Group established	November 2019	Regional Water Bureau, Regional Bureau Livestock, Agriculture and Natural Resource Development	WASH+ network members	GIZ SDR
2	Finalize WASH+ Action Plan	Action Plan complete	March 2020	Regional Water Bureau, Regional Bureau Livestock, Agriculture and Natural Resource Development	WASH+ network members	GIZ SDR
3	Field assessment and prioritization of 25 boreholes requiring solarization in 8 Woreda	Prioritized woredas	January 2020	Woreda Administration	GIZ SDR, Regional Water Bureau, Agriculture Bureau, AISDA	GIZ SDR, AISDA, Woreda Administration
	Training on proposal writing for Woreda officials from 8 woreda	Skills in proposal writing	February 2020	Woreda Administration	Regional Water Bureau, Agriculture Bureau	GIZ SDR, Woreda Administration
	Proposal developed workshop with Woreda officials for the solarization of 25 boreholes in 8 Woreda	Proposal completed and submitted to donors	March – April 2020	Woreda Administration	Regional Water Bureau, Agriculture Bureau	GIZ SDR, Woreda Administration
	Strengthen stakeholder participation at the Regional WASH Cluster	Joint-planning, share learnings, joint-financing and advocacy for an increase in the govt. O&M budget	November 2019	Regional Water Bureau	Water TWG partners	Regional Water Bureau



### Actions Plan: Water and Solar Hub (WASH+)

No.	Activities	Expected Output	Deadline of Implementation	Actors - owners	Actors - collaborators	Actors - responsibility by
	Review of technical and social assessment of non-functional boreholes, toilets and handwashing stations	Ensure equity of support across Woreda, coordinate with stakeholders to avoid duplication	April 2020	Regional Water Bureau	USA Lowland WASH Project, UNICEF	Regional Water Bureau
	Support the establishment of Woreda Water Forum	Coordination of activities, economies of scale, cost sharing, streamlining and enforcing byelaws,	May 2020	Woreda Administration		Woreda Water, GIZ SDR, IRC WASH
4	Engagement of WASH community-based management committees	Awareness and empowerment of the local community	May 2020	Community leaders, Woreda Water and Women Offices	WASH partners	Woreda Water, GIZ SDR, IRC WASH
	Engagement of Fodder Cooperatives	Awareness and empowerment of the local community, market linkages	May 2020	Community leaders, PADO and Women Offices		PADO, GIZ SDR
5	Strengthen zonal level maintenance teams	Human resource, capacity development training and technical equipment, logistics installed	June 2020	Regional Water Bureau	GIZ SDR, UNICEF, AISDA, USAID, USA Lowland WASH, IRC WASH, University of Semara and Ethiopia Water Tech. Institute	Regional Water Bureau
6	Develop public-private partnerships	Sustainable WASH supply chain	June 2020	National Water Bureau	Ethiopia Water Tech Inst. (maintenance and spare parts training) + private companies + financial institutions	National Water Bureau
7	Equip and rehabilitate deep boreholes, WASH, Fodder production	100 functional and operational boreholes				

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# PASTORALIST COMMUNITY CONVENTION



Parallel to the discussion on the different themes a pastoralist community convention was organized – attended by more than thirty elders and community representatives from Afar, Somali Region and Oromya.

The elders identified the following opportunities and risks with respect to the development of the lowlands of Ethiopia.

### Opportunities

1. Availability of local knowledge
2. Access to run off from the catchment
3. Availability of flood water
4. Availability of labour
5. Availability of skilled manpower, such as trained masons
6. Abundant plain arable land
7. Within this abundant land mass, the potential of agricultural land
8. Easy access to construction materials
9. High willingness, interest and awareness on the need for conservation
10. High motivation of newly appointed government officials
11. Increased political understanding and willingness to utilize lowland resources
12. Available development partners being interested to contribute to lowland conservation and development.

### Risks

1. Malnutrition and increased food insecurity
2. Devastating floods

3. Erosion, causing loss of soil and water
4. Gully formation
5. Reduced vegetation cover
6. Reduced land productivity
7. Reduced livestock population
8. Increased incidence of pests
9. Limited skills to utilize groundwater
10. Livestock diseases (opportunistic diseases)
11. Climate change: shift and larger variability in rainfall pattern, intensity and timing
12. Water shortage and the recurrence of droughts

### Way forward

There are two types of risks. First are those that can be solved at community level, with community contribution. The second category of risks goes beyond the community capacity. Based on this analysis the following ways forward were selected:

- Map our resources
- Awareness creation of the opportunities
- Adapting appropriate land management/utilization
- Adapting appropriate land conservation measures
- Correct land mismanagement practices
- Establish rangeland management user group cooperatives
- Adapting bylaws to control forest destruction
- Providing alternative livelihoods for those now destroying the natural resources

The Pastoralist Community Convention then identified a number of priority actions, including a large number of action to be done by the community itself, as well as priority investments and trainings.

- Develop of community plans
- Afforestation by community and PADO
- Control grazing pattern by community
- Mason training for men and plastering for women
- Training on use of water spreading resources
- Training on land use and management
- Training on alternative livelihoods, such as tailoring
- Supply and train on energy saving stoves
- More water spreading weir construction and other conservation measures, including dry stone measures
- Integrate water spreading weirs with biological measures
- Improve access to water, with solar pumps being very effective in the lowlands.

The elders and community members in the Convention also agreed that maintenance would be done by communities and that a contribution of two days a week can be committed.











**PRE CONFERENCE**  
**ON MANAGING AND UTILIZING INVASIVE SPECIES**



Part of the DREAM conference was the Regional Pre conference on Managing and Utilizing Invasive Species on 29 and 30 September 2019. The Pre Conference had 220 registered participants.

Over the last decades invasive species have changed the face of many arid and semi-arid lowlands in Ethiopia and other parts of the Horn of Africa. Most prominent is *Prosopis juliflora* that has expanded over large areas, but there are other non-native species such as *Acacia nubica*, *Calotropis procera* or *Parthenium*. *Prosopis* was introduced in East Africa in the late 1970s-early 1980s. Since then, it has spread rapidly at an invasive pace. For instance every year, more than 31,000 hectares of *Prosopis* are added in Afar state. This comes at the cost of other forms of land use such as grasslands and woodlands, which has serious consequences for rural livelihoods.

The Pre Conference discussed ways to control, eradicate or make beneficial use of invasive species in the arid and semi-arid lowlands and to explore on how to come to a coordinated response. It brought experience from different regions and countries – Ethiopia, Kenya, Pakistan, Namibia, Somaliland - and was actively attended by a wide range of stakeholders – communities, national and local government, private sector representatives, researchers and NGOs. The conference proved to be a watershed event. It started to redefine *Prosopis juliflora* as an asset to be used productively at a large and systematic scale.

The Pre Conference programme consisted of presentations, panel discussions, a special Market Place of opportunities. In working groups three main groups of productive utilization were identified as part of a way forward: *Prosopis juliflora* for energy, for fodder and for wood products/ multifunctional use. The outcome of the Pre Conference was the formation of a working group taking this agenda forward.

Participants were welcomed by Dr Elisabeth van den Akker, the Programme Manager of the GIZ SDR Strengthening Drought Resilience Programme. She emphasized the need for a concerted approach to invasive species, especially *Prosopis juliflora*. The scale and impact of the *Prosopis juliflora* infestation is such that we need to move beyond research studies and pilots but to consolidate our efforts into an adequate response.



The conference was opened by HE Dr. Gebreziagber Gebreyohannes. His Excellency emphasized the need for game changing solution given the scale of the invasive species challenge. His Excellency also pointed out to the policy process set in motion in Ethiopia and the need to put these policies into practice.

## PRE-CONFERENCE DAY 1: SUNDAY, SEPTEMBER 29TH, 2019

Time	Activity
10:00 – 11:00	Welcome Address: Dr. Elisabeth van den Akker, GIZ SDR Key Note Speech HE Dr. Gebreziagber Gebreyohannes, State Minister, Ministry of Agriculture Moderators Objective and programme of the Pre Conference
11:00 – 11:15	Group Photograph
11:15 – 12:00	Presentations, followed by Questions and Answers Prosopis – introduction; dispersal, economic and environmental impacts during the last decades <ul style="list-style-type: none"> <li>• Dr. Gabriel M. Muturi, Deputy Director, Forest Biodiversity and Environment Management – KEFRI, Kenya</li> <li>• Dr Hailu Shiferaw– Land and Water Resources Institute</li> </ul>
12:00 – 13:30	Lunch
13:30 – 14:00	Presentation Community Perspective - Socio-economic Aspects of Prosopis and Other Invasive Species
14:00 – 15:00	Panel Discussion: <ul style="list-style-type: none"> <li>• Eradication, Management or Utilization – experiences from different countries</li> <li>• Ethiopia – Alawis Ahmed</li> <li>• Namibia – Dagmar Honsbein</li> <li>• Pakistan – Karim Nawaz</li> <li>• Somaliland – Sadia Musse Ahmed</li> <li>• Kenya – Gabriel Muturi</li> </ul>
15:00 – 15:30	Coffee Break
15:30 – 16:45	Market Place and Open Exchange On display: <ul style="list-style-type: none"> <li>• Wood products and non-wood products</li> <li>• Different value chains</li> <li>• Biomass energy</li> <li>• Stove programme</li> <li>• Processing of animal feed</li> <li>• Bush clearing for fodder</li> </ul>
16:45 – 17:00	Closing Remarks by HE Dr. Gebreziagber Gebreyohannes



## PRE-CONFERENCE DAY 2: **MONDAY, SEPTEMBER 30TH, 2019**

Time	Activity
8:00 – 9: 00	Reporting back
9:00 – 09:30	Using Prosopis in Afar – summary of experience - Alawis Ahmed
9:30 – 11:00	<p>Views of the private sector</p> <p>Presentation: Using RS Technology to capture distribution of Prosopis for energy supply</p> <ul style="list-style-type: none"> <li>• Dr Asnake Mekuriaw, Panafrica Geoinformation Services PLC, Ethiopia</li> </ul> <p>Presentation: Biomass for cement production</p> <ul style="list-style-type: none"> <li>• Ato Gezahegn Amza (National Cement Factory)</li> </ul> <p>Panel Discussion</p> <ul style="list-style-type: none"> <li>• Industrial Inputs Agency- Habtamu Arage</li> <li>• Feed industry (Ethio-Feed) – Beruk Yemane</li> <li>• Wood processing industry, Biadgign Sheferaw, GM, Amahara Forest Enterprise</li> <li>• Commercialization of Prosopis biomass for electric power production (Michael Kiarie Manager, Cummins Co-Generation Comp. (Kenya)</li> </ul>
11:00 – 11:15	Coffee Break
11:15 – 12:30	<p>Group Discussions (Six Groups)</p> <p>Using Prosopis for Energy, Feed or Wood Products</p> <p>Presentation of Group Discussions</p>
12:30 – 14:00	Lunch
14:00 – 15:30	Group Discussion – Action Planning
15:30 – 16: 00	Coffee Break
16:00 – 17:00	<p>Presentation of Workshop Findings – Actions and Follow Up</p> <p>Messages to present at DREAM Conference</p> <p>Closure of Pre-Conference</p>
Evening programme	Dinner and Story Telling

Richard Mutukuri from the Kenya Forest Research Institute gave a presentation on the spread and control of *Prosopis juliflora* in Kenya. Everywhere in East Africa *Prosopis* infestation increased tremendously over the last decades and the same was the case in Kenya. Different *Prosopis* varieties came to dominate the vegetation, incurring net losses to farmers and pastoralists. In the last 50 years vegetation changed from Acacia woodland to mixed Acacia/ *Prosopis* woodlands to *Prosopis* deserts – with very few other species and a dramatically reduced herb cover and herb density. The number of *Prosopis* seedlings can be up to 58,000 per hectare – which is 4-6 times that of other woodlands. Several strategies are used – making beneficial use of the pods and stump management.

Clearing and replacing *Prosopis* spp with grass and crops has succeeded primarily on private land, rarely on communal areas. Good results were observed in Baringo County where an NGO provide subsidized cultivation costs and grass seed, yet the scale of the intervention was very small compared to the area invaded. Charcoal production has worked very well driven by supportive Government policy to limited charcoal production from other species. The constraints though are in the proper supervision and coordination to facilitate systematic clearing/management regimes of invaded areas. The processing of *Prosopis* pod into local feed – mixed with crop residues – is promising too. Transport and the availability of the crop residues is the challenge for scaling such enterprises. There has also been considerable experience in Kenya with user groups in *Prosopis* conversion. These groups are only sustained if their members have a continued benefit.

Next, Dr Hailu Shiferaw's presentation was given on estimation of current distribution of *Prosopis* in the Afar Region, Ethiopia. The research that covers the period 1986 to 2017 indicated an expansion of *Prosopis* from none to estimated land covered of about 1,173,000 ha (12.3% of the total regional area) in the Afar Region only. Results of the study suggest that the invasion did not increase linearly but was much faster after 2000 (1986-2000: 10,900 ha per year; and 2000-2017: 48,500 ha per year); taking over barren land and areas covered by grassland, and bush-shrub-woodland. The high amount of water use by *Prosopis* trees uses, i.e. 0.5 to 0.8 liter/hour, or 7 (+2) liters/day, equivalent to 3.1 and 3.3 billion m<sup>3</sup>

of water per year, was a main finding of this research. The expansion of *Prosopis* into more lowlands is a prime future challenge of IGAD countries. The study recommended management at regional level. Management in a single country is not a long lasting solution as the species is distributed by different agents such as livestock, wild animals, birds, rivers, and flood courses and even by people along transport corridors.

The programme continued with representatives of communities from Afar and Somali Region describing the relentless expansion of *Prosopis juliflora*, hampering livestock movement and reducing grazing area and farm land, but at the same time also providing a source of fuel, especially charcoal. Charcoal production however has been hampered, after a ban was issued following the uncontrolled use of other species for charcoal making. In Bale in Oromyia other invasive species occur but not *Prosopis*.

A panel discussion was organized bringing together practitioners from Ethiopia, Kenya, Pakistan, Somali land and Namibia. At present main beneficial use are charcoal and fodder. In Namibia bush clearing is organized in a controlled manner. The bush (not *Prosopis*) is converted into a fodder under a quality control licensing arrangement. Trials are starting in Somaliland to see if the same is possible with *Prosopis*. In Somaliland there is good experience in charcoal making from *Prosopis*. The easy availability of the invasive plant has reduced travel time for producers. The charcoal making is combined with the introduction of special fuel saving cooking stoves.





Next the market place was organized with a large number of possible uses for Prosopis – different types of fodder, stoves for local fuel, wood products and the wholesale conversion of cleared bush into fodder.



The day concluded with HE Dr. Gebreziagber Gebreyohannes summarizing main take home points, in particular the opportunities to deal with invasive species in a creative and pro-active manner, as the examples from other countries also demonstrated. In considering prosopis as a resource to be used and taking all precautionary measures solutions are possible to deal with the current threat. He welcomed a follow up to the conference and requested the conference to contribute to the policies and implementation plans being formulated in this regard.



On the morning of the second day of the Pre Conference Alawis Ahmed presented his study on production and trade of charcoal from *Prosopis juliflora*. The presentation was based on a study undertaken in Aysaita and Afambo woreda of Afar region. The study found that charcoal business is an important complementary livelihood, but that illegal production continues to be a major cause of losing biodiversity in an otherwise already poor environment. Lack of allocation of charcoal production areas, drought that made charcoal one of the main livelihood supports, the unsystematic government approach, absence of *Prosopis* management practice, absence of conducive regulation and perceptions towards it, poor community involvement are exacerbating the problem. Recommendations drawn from this study are:

- *Prosopis* management and utilization mechanism should be established between concerned institutions and community members within Afar region.
- Business oriented *Prosopis* charcoal should use the species as alternative livelihoods and demanding domestic fuel.
- All stakeholders to be brought together and involved
- Value addition for more economic benefits by analysing commercial viability
- Review *Prosopis* control and management regulation
- Capacity building on *Prosopis* management, by establishing demonstration sites, charcoal production, marketing and utilisation,

The conference proceeded with a Business Panel. This was set off by presentation to establish the exact extent of the *proposis* biomass. The study on the application of remote sensing technology to capture distribution of *Prosopis* for energy supply in Afar region, Ethiopia was presented by Dr. Asnake Mekuriaw from Panafrica Geoinformation Service. The study shows the effectiveness of using RS products such as Sentinel-2 level 1-C and GIS techniques to map the spatial extent of *Prosopis juliflora* and estimate its Above-ground biomass (AGB). Areas below 200 to 1500 m asl; and

rainfall ranging from 50 to 1500 mm and temperature below 50°C (air) are mentioned as suitable areas for *Prosopis* growth. The result showed high distribution of *Prosopis* in the southern parts of Afar region and Awash Fentale, Amibara, Gewane have high AGB than the other parts.

The dry biomass of each tree was above 2 kg; and the average dry total biomass was 39,057 kgs/ha, ranging between 4405-126,778kgs. This gave a total of 8.7 billion kgs dry total biomass in the study area. The study recommended the need for land use planning and for *Prosopis* to be considered as a land rehabilitation option in degraded areas, including its use for youth job creation.

Beruk Yemane the Founder and General Manager of Ethio-Feed gave a presentation on Innovative Feed Solutions. His presentation was focused on the need for alternative feed resources that can make use of *Prosopis* pods. Ethio-Feed has conducted practical research on different uses of *Prosopis* pods and leaves as source of livestock. The company produces high quality dairy, fattening and poultry feed products, multi-nutrient blocks for dairy, cattle, camels and shoats, and high quality mineral blocks for dairy animals. He welcomed cooperation and the creation of linkage with youth groups, association or cooperatives that can supply the feed under “franchise business partnership”. The current demand of the company would be 300 to 500 t/y.

Biadgign Sheferaw, the General Manager of Amhara Forest Enterprise described the company’s intention to use *Prosopis juliflora* as part of its operation, in particular for large scale charcoal production and as livestock feed. The Amhara Forest Agency aims is to accelerate the economic and social development of the region by developing and producing forest products as well as by increasing the value of same. Besides, the Enterprise wants to generate employment opportunities and improve the living conditions of the poor. In general it wants to narrow the growing gap between supply and demand in wood and wood products.

The potential of alternative energy development from *Prosopis* for Ethiopian Cement Industry was presented by Ato Gezahegn Amza of the National Cement Factory. Ato Gezahegn indicated Clinker Capacity of eight large



cement factories to be 12,850,000 Ton/year. This requires import of 1,690,300 ton of coal/year. It is planned that 40 to 60% of this energy demand to be substituted from Prosopis. Among the benefits of replacing coal with Prosopis as alternative fuel source are: its contribution to reduce CO2 emission, great abundance and proximity of Prosopis, reduced cost of cement production, contribution to the Principle of Climate Resilient Green Economy (CRGE), saving hard currency spent on coal, job creation, reduce invasion of Prosopis. Therefore, it is concluded that the development of Prosopis is an alternative energy source that will have a WIN-WIN-WIN effect for macro-economy of Ethiopia and the Cement Industry.

Michael Kiarie, Manager at Cummins Co-Generation Company explained the functioning and the sourcing of the path-breaking Prosopis bio-mass electric power plant, developed in Baringo County in Kenya. The plant is scale-able, and can be expanded. Careful and secure sourcing is an important concern.



## AVAILABILITY

### Area:

Estimated to be about **1,173,000 ha** - only in the Afar Region current (Dr.Haile)

### DRY BIOMASS (Dr. Asnake):

From each tree was above **2 kg**

**39,057 kgs/ha- 4405-126,778 kgs**

Total dry biomass only over 2300 sqm was **8.7 billion kgs**

**45,813,861 Tons** from Afar alone

## DEMAND

### ENERGY

Industrial Demand (Ato Gezahegn- Cement industries)

- Clinker Capacity (ton per year)  
12,850,000
- Demand coal import (ton per year)  
1,690,300 (40 to 60% of this energy demand can be substituted from Prosopis)
- Expenses coal import US\$/Y  
304,254,000

### FEED DEMAND

(Ato Beruk)- 300 to 500 t/y

### OTHER INDUSTRIES:

- Wood Products (Ato Bidgign)
- Construction
- Charcoal
- Large scale feed production

The participants in the Pre Conference then prepared action plans on several themes related to the productive use of *Prosopis juliflora*:

- *Prosopis* and biomass energy production
- *Prosopis* and fodder production
- *Prosopis* and wood and multipurpose products

Each topic was discussed in two groups. The combined summary of results of the discussions is:

## PROSOPIS FOR BIOMASS ENERGY PRODUCTION

The main domestic use of *Prosopis* is as charcoal and fuelwood. Instances of its industrial uses can be seen in Asaita, where briquettes are made from *Prosopis* char dust. Other applications of *Prosopis* in industry are mostly as fuel wood, as seen in brick making, pottery, hotels/schools, bakeries, furnaces, boilers, and cement factories.

### KEY ACTIONS

Going ahead, the following are the key actions to be taken in the short term, to build upon the potential of *Prosopis* for energy

	KEY ACTION	TIMEFRAME	RESPONSIBILITY
1	Preparing a road map for cooperation and communication between various parties (such as private sector and communities)		<ul style="list-style-type: none"> <li>• Government organisations</li> <li>• Private sector</li> <li>• Development partners</li> </ul>
2	Research and survey on feasibility of production and process		<ul style="list-style-type: none"> <li>• Academic and research institutions</li> </ul>

	KEY ACTION	TIMEFRAME	RESPONSIBILITY
3	Policy and regulations related to energy from <i>Prosopis</i>		<ul style="list-style-type: none"> <li>• Government organisations</li> <li>• Development Partners</li> </ul>
4	Collect and disseminate research outputs	4 months	<ul style="list-style-type: none"> <li>• Bureau of Agriculture</li> </ul>
5	Establish an organization	6 months	<ul style="list-style-type: none"> <li>• Bureau of Agriculture</li> </ul>
6	Mapping of organisations that work on <i>Prosopis</i>	1 month	<ul style="list-style-type: none"> <li>• Bureau of Agriculture</li> </ul>
7	Organise youth under cooperatives	3 months	<ul style="list-style-type: none"> <li>• Woreda Coeprative Office</li> </ul>
8	Provision of Inputs for the Associations	4-6 months	<ul style="list-style-type: none"> <li>• Government and Developmental office</li> </ul>
9	Create market linkage	3-4 months	<ul style="list-style-type: none"> <li>• Government and private enterprises</li> </ul>
10	Assessment (area, tonnes, communities to be involved)	3 months	<ul style="list-style-type: none"> <li>• Regional government</li> <li>• Bureau of agriculture</li> <li>• Academia</li> </ul>
11	Awareness of national strategy and field guide, including translation etc	3 months	<ul style="list-style-type: none"> <li>• Regional government</li> </ul>
12	Joint action planning with key stakeholders	1 month	<ul style="list-style-type: none"> <li>• Various stakeholders, led by bureaus of agriculture and land use</li> </ul>
13	Funding for implementation of action plan	1 month	<ul style="list-style-type: none"> <li>• Development partners,</li> <li>• Private sector</li> <li>• Local government</li> </ul>
14	Creation of local self-help groups in a structured manner	3-6 months	<ul style="list-style-type: none"> <li>• Ministry of Agriculture</li> <li>• Regional Government</li> <li>• Afar Pastoral Development Association</li> <li>• NGOs</li> </ul>



	KEY ACTION	TIMEFRAME	RESPONSIBILITY
15	Strengthening and engaging local/ customary institutions		<ul style="list-style-type: none"> <li>Clan leadership</li> <li>Woreda leaders</li> </ul>
16	Training for community members, exposure tours, field demonstration for awareness of PJ management and enterprise/ commercialization/ gender		<ul style="list-style-type: none"> <li>Development partners</li> <li>Regional government</li> <li>National/ Clan/ religious leaders</li> <li>Schools</li> </ul>
17	Awareness on Prosopis (market, user rights)	Starting January and continuing thereafter	<ul style="list-style-type: none"> <li>Private sector</li> <li>Development agents</li> </ul>
18	Contextualise <ul style="list-style-type: none"> <li>"Prosopis law" to community level</li> <li>Management strategies</li> </ul>	October-December 2019	<ul style="list-style-type: none"> <li>Government</li> <li>Development agents</li> <li>Academic Institutes</li> </ul>
19	Scoping (market availability)	January to March 2019	<ul style="list-style-type: none"> <li>Government</li> <li>Private sector</li> </ul>

The role of various stakeholders in using Prosopis for biomass energy would be:

#### Local community (Men, Women, and Youth)

- Participation and support through harvesting
- Form cooperatives and support Industry market

#### Government (Woreda and Region)

- Land use planning
- Legal provision to exploitation/use
- Subsidies and /or concessions
- Policy formulation

#### Private Sector

- Create jobs
- Mobilize resources/ investment
- Training and Innovation
- Partnership- Government/Community

#### Research and Academia

- Knowledge qualitative assessment
- Evidence
- Inform policy development
- Innovation and Technology
- Monitoring and Evaluation
- Education

#### Development Partners

- Support community initiatives
- Knowledges dissemination/spread
- Support government and private sector initiatives
- Access to finances, business development skills
- Influence government policy
- Creating value chains and development
- Support cooperatives, associations and other groups

### **The benefits of utilizing Prosopis for Energy would be:**

- Creation of job opportunities
- Rangeland rehabilitation
- Income generation and livelihoods
- Skill development
- Opening up of land for agriculture
- Negative impact on natural ecosystem minimized

### **Prosopis for energy would contribute to management of Prosopis as an invasive species:**

- Harvesting of Prosopis contains its proliferation , if done properly
- Government ensures that responsible use is maintained

### **Important conditions for Securing Tenure**

- Community Involvement
- Recognition of tenure security for community entitlement
- Awareness on user rights
- New procedures and adequate change management

### **Technological Features**

- Easy to initiate
- Low-cost for adaptation
- Easily manageable
- Appropriate technology
- Fuel efficient
- Appropriate equipment and tools
- Easily accessible
- e.g. Stoves, gasification, Boiler/cogeneration, and Domestic boiler







## PROSOPIS FOR TIMBER AND MULTIFUNCTIONAL USE

Current uses for propopis are fencing, construction material, traditional furniture, small scale infrastructure (wells, bridge, and rock stabilizer) and artefacts (such as walking sticks). There are several new potential uses: fuel for bricks, handicraft items, biochar to improve soil fertility, paper and chemicals and composite products.

### KEY ACTIONS

	KEY ACTION	RESPONSIBILITY
1	Community consultation on various benefits and threats in various zones	• PADO
2	Mapping of actors	• Universities and research centres
3	Review and update of existing policies and regulations	• Government • Research and academic institution
4	Mapping of infested areas beyond Afar	• GIZ SDR
5	Regional Bureaus of Agriculture and Land Management Develop methodology on multi-purpose use	• BoLAND
6	Facilitation and implementation	• Regional bureaus
7	Develop a land utilization plan	• Regional government

The roles of various stakeholders are as follows:

#### Local community

- Own decision making
- Clear agreement/roles
- Clear community organizational structure

- Awareness and capacity building on more commercially benefitting products

#### Government

- Provide capacity building(initial) for example schools
- Conducive legislative environment(enabler)
- Law enforcement, monitoring, evaluation and reporting
- Relevant financial support and equipment schemes

#### Private sector

- Market development
- Business planning
- Product development and manufacturing
- Raise capital for expansion (scaling up)
- Cooperative and private sector(cooperation to develop community)
- Investment
- Technology/knowledge transfer

#### Technological requirements

- Supply: local resources based(hand held tools)
- Whole tree utilizations
- Processing: industry related for industrial purposes(effective)
- Mechanization



## PROSOPIS FOR FODDER AND FEED

Prosopis can be processed in different ways and serve as a cattle feed, often in combinations with other inputs. In some areas entire trees - leaves, pods, stems, branches – are processed into fodder.

### KEY ACTIONS

	KEY ACTION	TIMEFRAME	RESPONSIBILITY
1	Awareness creation	Nov-Dec 2019	<ul style="list-style-type: none"> <li>Regional, zonal and woreda administration</li> <li>Semera university</li> </ul>
2	Experience sharing and study tools: Prosopis utilization and management, new technologies	Jan-Feb 2020	<ul style="list-style-type: none"> <li>Federal and regional government, DP</li> </ul>
3	Training: institutional and community (Technology adaptation, participatory land use planning, participatory range land management, Prosopis prevention, clearing and usage)	Mar-Apr 2010	<ul style="list-style-type: none"> <li>Federal government</li> <li>Semera University</li> <li>Melka Were Research Centre</li> <li>APARI</li> </ul>
4	Development of land use management <ul style="list-style-type: none"> <li>Mapping(resources indentification)</li> <li>Delination</li> <li>Land use planning</li> <li>Implementation and monitoring</li> </ul>	Apr-May 2010	<ul style="list-style-type: none"> <li>Community</li> <li>Development Agents</li> <li>Woreda</li> </ul>

	KEY ACTION	TIMEFRAME	RESPONSIBILITY
5	Establish task force and coordination at all levels <ul style="list-style-type: none"> <li>Identification of partners</li> <li>TOR</li> <li>Establish and facilitation the forum</li> </ul>	May 2020	<ul style="list-style-type: none"> <li>Regional Government</li> </ul>
6	Strengthening traditional institutions	Mar-June 2020	<ul style="list-style-type: none"> <li>Regional Government</li> </ul>
7	Enhance PPP	June-Dec 2020	<ul style="list-style-type: none"> <li>Regional Government</li> </ul>
8	Establish cooperatives <ul style="list-style-type: none"> <li>Prosopis animal food</li> <li>Legalization of coopratives</li> </ul>		<ul style="list-style-type: none"> <li>Woreda and zonal administrations</li> </ul>
9	Invite private investors <ul style="list-style-type: none"> <li>Link cooperatives with private investors</li> </ul>	July-Sep 2020	<ul style="list-style-type: none"> <li>Federal and regional governments</li> </ul>
10	Introduce appropriate technologies <ul style="list-style-type: none"> <li>Food production and transportation</li> </ul>	Sep-Dec 2020	<ul style="list-style-type: none"> <li>Federal and regional governments</li> <li>Research organisations (APARI, MW)</li> <li>Universities</li> </ul>
11	Different study and assessment		<ul style="list-style-type: none"> <li>Research organizations and universities</li> </ul>

## ANNEX 1: LIST OF PARTICIPANTS

No	Name	Organization
1	Mohammed Mussa	Natural Resource Conservation and utilization Directorate
2	Jamal Kalif Abdi	Jigjiga University
3	Abdu Mussa	GIZ
4	Mortada Ahmed	GIZ (Cross-Border Collaboration Programme in Western Ethiopia and Eastern Sudan)
5	Michael Kanyongo	Cummins Cogeneration Ltd
6	Chris Annen	NRM consultant invited by GIZ
7	Melat Tiumelsan	GIZ SDR
8	Tekalgine Bentr	MoA
9	Ahmed Adem	GIZ
10	Simo Choge	KEFRI
11	Ketema Yadasa	OSD
12	Ali Mohammed	GIZ
13	Valerie Broinne	ARDD
14	Aydahis Afkea	WFP
15	Wolderufael Alemu	
16	Birhane Berhe	Mekelle University
17	Hussen Edris	APDA
18	Cavolavon Moesteis	GIZ/ LIP
19	Addisu Kassa	GIZ
20	Sadia Musse Ahmed	PENHA
21	Ndungo Ischuch	GIZ
22	Kifle Woldearegay Woldemariam	Mekelle University, Ethiopia
23	Lewis Karienyeh	GIZ - Cross Border Collaboration Program for Eastern Sudan & Western Ethiopia

No	Name	Organization
24	Hailu Shiferaw	Water and Land Resources Center, Addis Ababa University
25	Dafa Gudina	CARE Ethiopia
26	Elisabeth van den Akker	GIZ SDR
27	Maritta Niskanen-Tamiru	Finnish Red Cross
28	Gebrerufael Hailu Kahsay	Mekelle University
29	Martin Maurer	GIZ SDR
30	Christian Dohse	GIZ SDR
31	Gerben van Ek	GIZ SDR
32	Alexander Strunck	GIZ SDR
33	Christina Ketter	GIZ SDR
34	Binyam Girma	GIZ SDR
35	GIZachew Legesse	ICRISAT
36	GebeyawTilahun Yeshaneh	ICRISAT
37	Dejene Legesse Kenna	Ministry of Water, Irrigation and Energy, Basin Development Authority
38	Indris Siraje	GIZ SDR
39	Rabe Yahya	CIMMYT
40	Hayat Shemsedin	GIZ SDR
41	Asnake Mekuriaw	Panafrica Geoinformation service plc
42	Maria Gerth	Fostvedt-Mills Consulting
43	Franciscus (Frank)van Berkom	GITEC IGIP GmbH
44	Paul-Friedemann Melichar	GIZ SDR
45	Mortada Mohammed	GIZ Sudan
46	Abnet Sisay	VSF Germany
47	Oumer Alebachew	Ethopia Redcross Society Afar Branch Office



No	Name	Organization
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49	Wendmagegnehu Worku	Ethiopian Red Cross Society
50	Awo Lyimer	International Organization for Migration
51	Melaku Tadesse Gebresellase	GIZ SURED
52	Henok AragieYimer	GIZ SDR
53	Temesgen Legesse	ETHIOPIA RED CROSS SOCIETY AFAR BRANCH OFFICE
54	Tesfa-alem Gebreegziabher Embaye	Mekelle University/FBLN-Ethiopia
55	Eyasu Yazew Hagos	Mekelle University
56	Girma Ejara	Oromia Pastoral Area Development Coordination Commission
57	Meaza Merihun	Oromia Pastoral Area Development Coordination Commission
58	Dessie Derib	GIZ SDR
59	Hailemariam Kejela	Oromia Pastoral Area Development Coordination Commission
60	Million Sebsibe	Oromia Pastoral Area Development Coordination Commission
61	Wagari Takele	Oromia Pastoral Area Development Coordination Commission
62	Jemal Aliye Gando	DRSLP Project

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63	Amsale Retta Shibeshi	PENHA
64	Masresha Andarge	AISDA
65	Jamal Kalif Abdi	Jigjiga University
66	Osman Eshetu	Friendship Support Association
67	Lulseged Yimer	Action for Integrated Sustainable Development Association (AISDA)
68	Erik Fritzsche	GIZ Somaliland
69	Abdikani Ibrahim	GIZ
70	Aden Eid	GIZ
71	Abdusamad M/d	Com
72	Beruk Yemane	Ethio Feed
73	Mehammed Salih	AF Communication
74	Mohamed Ahmed	3DR
75	Ali Ismail	GIZ SDR
76	Alawis Ahmed Mohammed	
77	Misfin Belay	GIZ
78	Nuur, Abdirizak Jama	USAID
79	Jane Bevan	UNICEF
80	Tijan Mohammed	GIZ SDR
81	Habtamu Aragie	Industry
82	Mohammed Sile	Commication
83	Ahmed Yosuf	GIZ
84	Dagmas Hensben	Ideal XCC
85	Mohammed Mahmed	GIZ
86	Ahmed Ebrahim	Semera University
87	GIZahegn Amiza	EAH
88	A/aziz Ahmed	Consultant
89	Yebegaesheet Legesse	MoA

No	Name	Organization
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91	Demere Endaylaw	GOPA/KFW
92	Biadgign Sheferaw	Amhara
93	Ahmed Abdillahi Abdi	GIZ
94	Muktar Abdi Elmi	MoLFD
95	Mustafa Ahmed	GIZ Lip
96	Dr.Gabriel	KEFRI
97	Abenet Mengistu	MoA
98	Gurent Ahmed	FSA
99	Dubale Adamasn	USAID
100	Niyal Tadm	GIZ SDR
101	Jemal Nur	GIZ
102	Desalagn Yezew	UNICEF
103	Muzawn Adam	PADO
104	Hassen Hussien	DADO
105	Seyum Getachew	IFAD
106	Desta Yoseph	ECDSIDC
107	Mohammed Adem	AILSDA
108	Michael Abera	IRC WASH
109	Kalifa Kadir	FBC
110	Hussen Ali	UNFPIA
111	Heinz Bender	GIZ
112	Patrick van den Acker	GIZ
113	Alem Aby Baru	ETV
114	Yohanes Assfa	
115	Karim Nawaz	Pakistan Spate Irrigation Network/MetaMeta
116	Ibsa Yousuf	Php/c/com

No	Name	Organization
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118	Abdulhakim Yusuf Roba	Community
119	Workineh Tefera Dibaba	Community
120	Husen Aliyi Jarra	Community
121	Adam Goba Kebele	Community
122	Muhammed Ali Jilo	Community
123	Muhammedhusens Husman Farah	Community
124	Husen Gutu Oda	Community
125	Hassen Abdulahi	RPDB
126	Mohammed Ahmed	GIZ
127	Fikere Zerfu	Jigjiga University
128	Hamdi Mohamed	GIZ
129	Tesfa Mandye	GIZ SDR-JIIGA
130	Mohamed Korme	GIZ
131	Tilahun Amale	ICRISAT
132	Mahat Danel	GIZ-SDR
133	Manayeh Kassahu	ICRISAT
134	Lulseged Mekonnen	GIZ-SORED
135	Belete Bantero	MoA/ATA
136	Hirpo Gudeta	ACEINM
137	Andua Schenek	Abbay Basin
138	Asmelash Kebede	USAID-LWASH
139	Professor Mitiku Haile	Mekelle University
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141	Brak Alemayehu	CBC
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143	Abduselam Mahmud	Semera University



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146	Jemal Seid	SPR
147	Mohamed Usman	ECSU
148	Nuradin Sadi	CARE
149	Amunn Ali	MOERD
150	Zemichael Sisay	ETV
151	Dawit Begashaw	ETV
152	Paul Roden	GIZ SDR
153	Sintayw Noyho	Gewon TVCT
154	Mohammed Hamed	Gewon TVCT
155	Mesfin Admasu	Gewon TVCT
156	Dr. Adeel Mustafa	GIZ SDR
157	Ali Mohammed	GIZ SDR
158	Mohammed Nur	GIZ SDR
159	Abdu Kaloyta	Teru Woreda admin
160	Mohammed Hussen	ADDB, Semera
161	Adem Mohammed	BoLAND, Semera
162	Belay Mekonnen	BoLAND, Semera
163	Mohammed Mussa	BoLAND, Semera
164	Ali Mujahid	BoLAND, Semera
165	Mohammed Abdulletif	APARI Afar, Semera
166	Abdi Ahmed	KAISC, Semera
167	Mohammed Awol	SPB, Semera
168	Goshu Shiferaw	ACA, Semera
169	Neima Mohammed	APARI Afar, Semera
170	Ahmed Aliyu	BoLAND
171	Dr. Jabir Yasin	BoLAND

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173	Mehari Birhane	PADO, Awura
174	Ali Ahmed	Afar President office
175	Birhane Kaysay	Peace & Security
176	Amaniel Berhe	
177	Mohammed Amin	Golina Woreda admin
178	Ali Musa	Golina Zone admin
179	Teha Mohammed	Golina Woreda admin
180	Hussen Usman	PADO, Dalol
181	Shami Ahmed	Teru, GIZ focal
182	Hussen Yosuf	PADO, Teru
183	Amin Seid	Cooparaitive
184	Ibrahim Hasen	RPLRP, Semera
185	Idris Mohammed	BoLAND, Semera
186	Solomon Abera	PADO, Yallo
187	Mohammed Mussa	PADO, Awura
188	Shek Ali Hussen	Clan leader, Yallo
189	Ilaqmely Momely	Clan leader, Yallo
190	Solomon Fantaw	
191	Ahmed Mogole	PADO, Ewa
192	Hussen Mahammed	
193	Dr. Endris Feki	APARI Afar, Semera
194	Witika Nure	Chifra Woreda admin
195	Wagaris Haffa	PADO, Chifra
196	Mohammed Aden	PADO, Elidear
197	Ali Abdela Ali	Elider Woreda admin
198	Belay Mekonnen	GIZ
199	Ahmed Husses Mohamed	Afa Design, Semera

No	Name	Organization
200	Tadesse Yimer	PADO, GIZ focal EWA
201	Kasaye Dejene	Gewane, TVETC
202	Dr. Abdu Yasin Ali	PADO, Aba'ala
203	Nur Yasin	Community, Assaita/Galifage
204	Abdu Mohammed	Community, Assaita/Galifage
205	Hamdo Hamidu	Community, Assaita/Galifage
206	Musa Ibrahim	Community, Assaita/Galifage
207	Mohammed Zeyin	Community, Elidi'ar
208	Husien Ali	Dalol
209	Husen Dersa	Kunaba, woreda Admin
210	Mohammed Yayo	Afar Dev't, Semera
211	Abdurahim Ali	Afar Dev't, Semera
212	Darasa Ali	LLRP (PCDP) Semera
213	Abdulijelil Kadir	Elder, Abeala
214	Hussien Endris	Semera
215	Dr.Befekadu Mamo	DRSLP,Semera
216	Osman Mohammed	Afar. Water Bureau
217	Mohammed Abdulahi	Afar W.R.B
218	Getachew Ali	PADO, Kori
219	Solomon Assefa	APARI Afar, Semera
220	Tesfay Wondifraw	AWBDO, Amibara
221	Said Yimem	DRSLP,Semera
222	Teferi Ayalew	Adadale/Poly T.C, Asaita
223	Yesu Abdela	
229	Ahmed Abdulqadir	BoCT
230	Haydra Mohammed	
231	Ahmed Jemal	PADO, Chifra
232	Zeru Teshome	Semera

No	Name	Organization
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234	Mohammed Abaw	Awura d/admin
235	Ousman Ali Ousam	PADO, Dalol
236	Ousman Mohammed	PADO, Dalol
237	Ibrahim Denay	PADO,Yallo
239	Saleh Ali	PADO, Berehale
240	Hussein Mohammed	Admin, Yallo
241	Mohammed Adem	Admin, Abeala
244	Musa Yasin	Woreda office head, Asaita
245	Abbo Sato	Woreda head, Asaita
246	Abdulkadir Mohammed	EPPLUAA, Semera, director
247	Ali Zeynu	EPPLUAA, B/head
248	Adem Mohammed	EPPLUAA, Semera
250	Ahmed Mohammed	Afar Design, Semera
251	Abdulbasit Mohammed	Afar Design, Semera
252	Mohammed Hussen	DPFSPCo, head
253	Seita Mohammed	BoLAND
254	Muzemil Adem	Asayta TVET College
255	Hasen Husien	Asayta TVET College
256	Dr. Ahmed Ebrahim	Semera Universty
257	Seid Abdela	Afar Design
258	Mesfin Behanus	GIZ





## **DREAM ASAL 2019 Conference**



**The DREAM 1 Conference took place in Semara from 29 September to 3 October 2019. The conference brought a large number of people together and took stock of the best options for the development of the arid and semiarid lowlands in Ethiopia.**

**The objective of the next DREAM 2 is the coordination of all players around lowland development and the development of joint programs. The DREAM 2 conference will take place in Jijiga from 20-24 October 2020.**

**In 2021 the final DREAM 3 Conference will take place in Addis Ababa. It will discuss the scaling up of resilience programs with public and private sector, communities and non-government actors.**





*"The conference objective is to do stock-taking of tested innovative and successful approaches for natural resource management and improved livelihoods. We come together to learn jointly what works and what does not in lowlands.*

*We fully stand behind our joint commitments, we acknowledge that we need innovations for lowlands, which sometimes means failing forward in order to develop new solutions. Impacts shown so far are encouraging, for instance the work around water-spreading weirs, rangeland rehabilitation and management and flood-based farming as well as the development of livelihood options.*

*The eventual objective of all our joint commitment is to provide alternative livelihoods for population, who are home to lowland of Ethiopia and beyond become a model for the entire Horn of Africa.*

*We encourage all participants to really take the upcoming days to work together and identify solutions/ best practices, which can be taken to scale and will bring sustainability which will be the topics for the conferences in 2020 and 2021."*

**HE Dr Kaba Urgessa – State Minister of Agriculture**

**Opening Speech DREAM Conference 2019**





**FLOODS SPREADING OVER  
A LARGE AREA DUE TO A  
WATER-SPREADING WEIR**

