



Republic of Kenya



Ministry of Devolution and Planning



Japan International  
Cooperation Agency (JICA)

# Guideline for Enhancement of Pastoralists Communities' Resilience to Drought through Community Based Drought Management

*~ From the experiences of JICA ECoRAD Project*

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Nippon Koei Co., Ltd.



# Contents

## Part I Introduction

1. Purpose, users, and structure of the guideline ..... I-1
2. About the ECoRAD Project..... I-3

## Part II Basic Understanding

### About “Drought” in the context of Northern Kenya

3. What are the difficulties brought by drought to the people in Northern Kenya? ..... II-1
4. How herds migrate in normal years, and why die in drought spell..... II-5

### About “Drought Resilience”

5. What is drought resilience? How can it be enhanced?..... II-8

### About “Community” in Northern Kenya

6. Concept of ‘Community’ in pastoral society is different from one in an agriculture based society ..... II-12
7. Distinctive ideas and attitudes of pastoral communities in Northern Kenya ..... II-14
8. External support as one survival option..... II-21
9. Different features and customs of different tribal communities..... II-23

## Part III Lessons for Better Community-based Drought Management

### Introduction

10. Lessons for all community-based drought management projects ..... III-1

### Lessons for Community-based Project ~ General Perspective

11. Tailor-made approach rather than standardised approach based on the characteristics of the target community ..... III-2
12. Four contributing factors for active committee to represent the community ..... III-6
13. Step by step approach to fill the gaps between the current situation and the ideal situation ..... III-10
14. Need to change communities’ attitude of dependency fostered by previous assistance..... III-12

**Drought Management at the Community Level ~ More Specific Topics**

|   |        |
|---|--------|
| 15. Elaborating and modifying the committees' roles of CMDRR: reflection of specific context in Northern Kenya .....  | III-14 |
| 16. Preparation for implementation of CAP: government assistance for short term and self-reliance for long term ..... | III-22 |

**Institutional Issues of Community-based Drought Management**

|   |        |
|---|--------|
| 17. Necessity to integrate the Community Action Plan (CAP) into the County Integrated Development Plan (CIDP).....              | III-28 |
| 18. Careful monitoring of the progress of decentralised structure, and its practical accommodation at the community level ..... | III-31 |

**Part IV Lessons in Each Technical Area**

**Sustainable Natural Resource Management (Engineering)**

|   |       |
|---|-------|
| 19. Strategic provision of water points is an important key .....                                       | IV-1  |
| 20. How to make "potential map of water pan development"? .....   | IV-3  |
| 21. Water pan, borehole, or other facilities for water points? .....                                    | IV-8  |
| 22. Where should the water facilities be built? In the wet season grazing areas or dry ones? .....      | IV-11 |
| 23. Recommendable water structure: JICA -type Rock Catchment .....                                      | IV-15 |
| 24. Solar power is one of the recommendable resources in Northern Kenya .....                           | IV-17 |
| 25. Do we have enough water resources in Turkana? .....   | IV-21 |
| 26. Where and how to construct boreholes effectively and economically against drought in Turkana? ..... | IV-24 |

**Sustainable Natural Resource Management (Community-based Management)**

|  |       |
|--|-------|
| 27. Management system should not be 'ideal' but be 'feasible' taking into consideration the capacity of the people ..... | IV-26 |
| 28. Involvement of the community from the planning stage .....   | IV-30 |
| 29. Liaise with the existing O&M scheme as a step of realistic development of O&M capacity .....                         | IV-34 |
| 30. Fee collection for O&M should not be introduced indiscriminately.....  | IV-38 |
| 31. Approach of introducing fee collection for O&M when applicable .....   | IV-41 |
| 32. Amalgamation of introduced system into customary social system .....   | IV-45 |

**Livestock Value Chain Improvement**

33. Livestock market conditions and potentials in Marsabit and Turkana ..... IV-47

34. Livestock market tendencies: selling and buying. .... IV-51

35. How to vitalise livestock trades in Northern Kenya: Heifer Exchange Programme..... IV-56

36. “Reseeding Farm” is one of the recommended low cost and easy activities for the community..... IV-59

37. Establishment of a good organisation for livestock is an important key..... IV-62

**Livelihood Diversification**

38. Selection of livelihood measures: need to consider socioeconomic conditions and categorisation of measures ~ planning aspect..... IV-64

39. Inputs of assistance: need to reflect beneficiaries’ capacity and cultural role ~ planning aspect..... IV-68

40. A must aim: capacity development of beneficiaries ~ procedural aspect..... IV-70

41. Contents of assistance: need for customisation based on kinds of livelihood measures ~ technical aspect ..... IV-74

42. Technical considerations from ECoRAD experiences ~ technical aspect..... IV-75

43. Business-related lessons: aspects of identification, production, market, and cost and benefits ~ technical aspect..... IV-78

44. Other issues: handout provision and other impacts ~ technical aspect..... IV-81

45. Fundraising for community people: start within current capacity ~ technical aspect..... IV-83

**Capacity Development of Government Officers**

46. Necessity of capacity development of the county government officers..... IV-87

# List of Abbreviation

|          |  |
|----------|--|
| A/C, D/C | : Alternative Current, Direct Current  |
| CAP      | : Community Action Plan  |
| CDF      | : Constituency Development Fund  |
| CIDP     | : County Integrated Development Plan   |
| CMDRR    | : Community Managed Disaster Risk Reduction  |
| DC       | : Development Committee  |
| DLMC     | : District Livestock Marketing Council   |
| DMC      | : Drought Management Committee   |
| DRR      | : Disaster Risk Reduction  |
| ECHO     | : Humanitarian Aid Department of the European Commission                           |
| ECoRAD   | : The Project for Enhancing Community Resilience against Drought in Northern Kenya |
| EWS      | : Early Warning System   |
| GA       | : Grazing Area   |
| GIS      | : Geography Information System   |
| GOK, GoK | : Government of Kenya  |
| HH       | : Household  |
| IGA      | : Income Generating Activity   |
| JICA     | : Japan International Cooperation Agency   |
| KES, Ksh | : Kenya Shilling   |
| LMA      | : Livestock Market Association   |
| LOWASCO  | : Lodwar Water and Sanitation Company Ltd.   |
| MCM      | : Million Cubic Meter  |
| MIS      | : Management Information System  |
| MWI      | : Ministry of Water and Irrigation   |
| NDMA     | : National Drought Management Authority  |
| NGO      | : Non-Governmental Organization  |
| O&M      | : Operation and Maintenance  |
| PRA      | : Participatory Rural Appraisal  |
| SRTM     | : Shuttle Rader Topography Mission   |
| TGDP Map | : Turkana Groundwater Development Potential Map                                    |
| TDS      | : Total Dissolved Solid  |
| UNESCO   | : United Nations Educational, Scientific and Cultural Organisation                 |
| UNICEF   | : United Nations Children's Fund   |
| VICOBA   | : Village Community Banking  |
| WDF      | : Women Development Fund   |
| WRMA     | : Water Resource Management Authority  |
| WUA      | : Water Users Association  |
| YF       | : Youth Fund   |

# Part I

# Introduction

In this part, purpose, assumed users, and structure of the guideline are explained as the introduction. The information on the ECoRAD project is also briefly shared.





## 1. Purpose, users, and structure of the guideline

*A definition of this guideline: “something that can be used to help you make a decision or form an opinion” (in Oxford Advance Learner’s Dictionary Edition-8).*

### **Purpose of this guideline**

The Japan International Cooperation Agency (JICA) has implemented the ECoRAD project, which is referred to as the project for Enhancing Community Resilience Against Drought in Northern Kenya since February 2012. Through its implementation, a lot of lessons were learnt.

Upon the completion of the project, the lessons learned were compiled in form of a guideline that is expected to be referred to by any institution interested in implementing initiatives to enhance community resilience against drought in Northern Kenya.

This guideline is intended to cover most of the important areas in community resilience against drought through community-based drought management. It should however be noted that the areas written on may not be perfect enough since the lessons have been basically learned only within the context of the ECoRAD activities.

### **Assumed users of this guideline**

This guideline is meant for a wide range of users.

First on the list are the national government ministries and related organisations which are mandated to cooperate with donor agencies in the implementation of programs/projects to enhance community resilience against drought in Northern Kenya, as well as the donor agencies and other implementing entities such as consultants and non-government organisations (NGOs)

Second, are county government officers in Northern Kenya who are very important expected users, responsible for development in their counties.

Third on the list are the community leaders who are also potential expected users including chiefs, administrators and members of several committees in the communities. Some of the lessons may not be applicable to this segment of users but, there are certain lessons that people who are supposed to lead the community should know.

**Structure of this guideline**

This guideline consists of four parts.

Part I is the introduction, which states the purpose, assumed target users, and structure of the guideline. This is followed by the outline of the ECoRAD Project.

Part II shows the basic understanding on the fundamental issues that should be known by all the stakeholders related to community-based drought management in Northern Kenya.

Part III then shares the lessons for better community-based drought management by practical aspects of the program/projects from a general and specific viewpoint.

Part IV highlights the lessons learnt in three technical areas and also shares lessons from the capacity development area of ECoRAD. All the lessons derived from the ECoRAD experiences are believed to be generally applicable in future like initiatives.

All of the lessons shared are categorised in small sub-parts in each part. They are shown in the form of topical messages that express what is intended to be conveyed most.

For those who understand community-based drought management comprehensively, it is good to read the guidelines from the beginning to the end. If any reader is interested in a particular area, the related topical messages for that area are good entry points..



## 2. About the ECoRAD Project

The outline of the project is summarised below:

### Overall goal

Poverty and food insecurity induced by the drought is mitigated in Northern Kenya.

### Project purpose

The pastoralist communities' resilience to drought is enhanced in Turkana County and Marsabit County.

### Expected outputs

**Output-1:** Capacity of community-based drought management is improved in target communities.

**Output-2:** Sustainable natural resource management is realised in target communities.

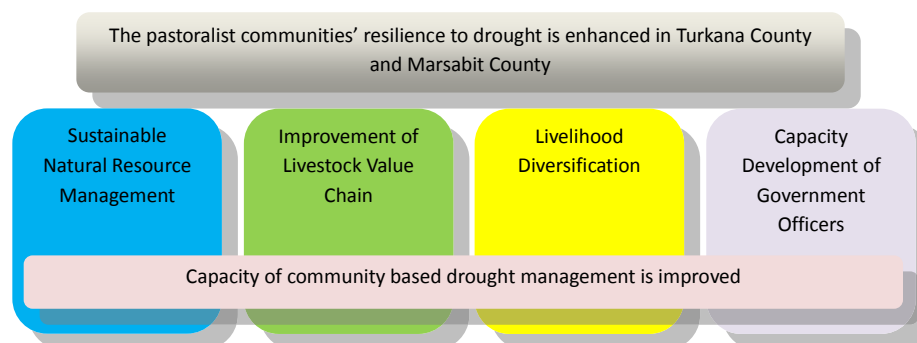
**Output-3:** Livestock value chain is improved in target communities.

**Output-4:** Diversification of livelihoods is promoted in target communities.

**Output-5:** Capacity of the government officers to enhance the pastoralists' resilience to drought is improved.

**Output-6:** The guideline for enhancing the communities' resilience to drought is established.

There are three main technical components, which are the Sustainable Natural Resource Management, Improvement of Livestock Value Chain, and Livelihood Diversification. In addition is the Capacity Development of Government Officers. The schematic image of the project is shown below.



Source: JICA Project Team

**Schematic Image of the Project**

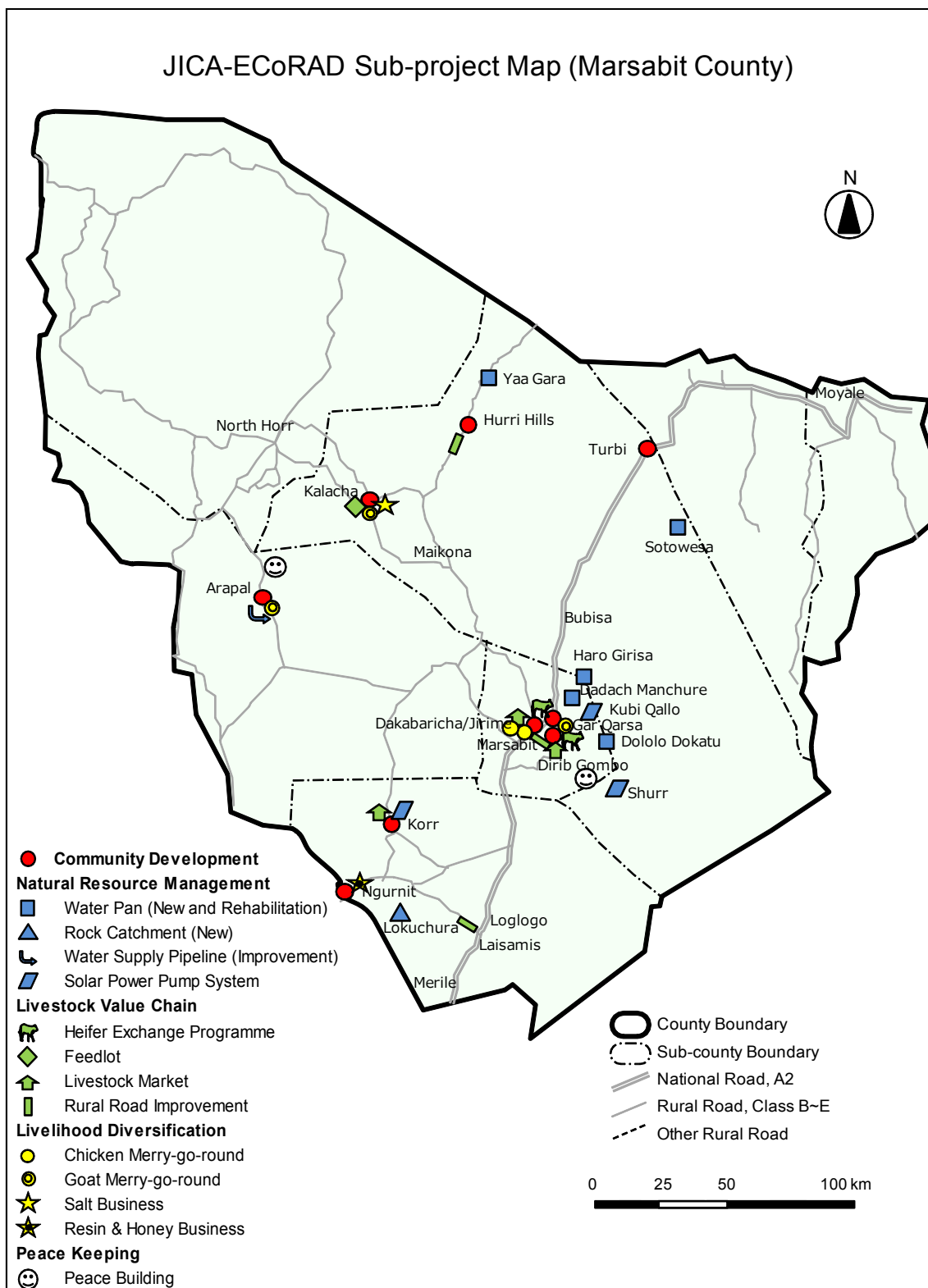
**Pilot communities and sub-projects**

There were 20 pilot communities, which consisted of nine in Marsabit, and 11 in Turkana. The sub-projects were implemented as per the technical areas mainly in these selected pilot communities. The pilot community sites in Marsabit and Turkana are listed below, and the sub-project maps are shown in the following pages.

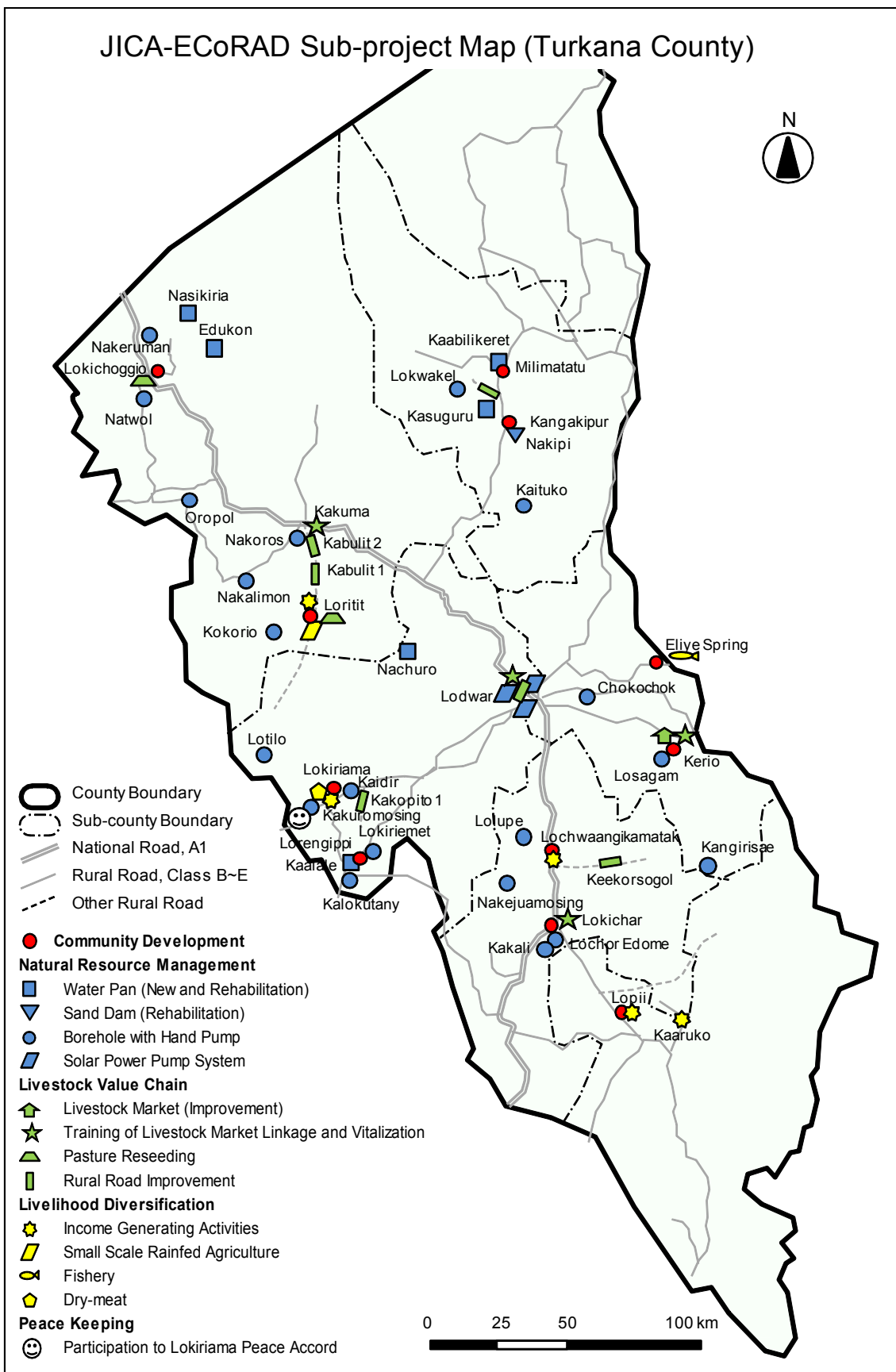
**Pilot Community Sites**

| Region/District (= current sub county) | Pilot Community Sites                      |
|--|--|
| Marsabit                               |  |
| Region-1                               | Turbi, Kalacha, Hurri Hills                |
| Region-2                               | Dirib Gombo, Dakabaricha/Jirime, Gar Qarsa |
| Region-3                               | Korr, Arapal, Ngurnit                      |
| Turkana                                |  |
| North                                  | Milimatatu, Kangakipur                     |
| West                                   | Loritit, Lokichoggio                       |
| Loima                                  | Lokiriama, Lorengippi                      |
| Central                                | Eliye, Kerio                               |
| South                                  | Lochwaangikamatak, Lokichar                |
| East                                   | Lopii                                      |

Source: JICA Project Team



Prepared by the JICA Project Team



Prepared by the JICA Project Team

# Part II

## Basic Understanding

Here, important points, which should be understood when community resilience projects against future drought implemented through community-based drought management are shown. These points are 1) drought in the context of Northern Kenya, 2) drought resilience, and 3) community in Northern Kenya





About  
“Drought” in  
the context of  
Northern  
Kenya

### 3. What are the difficulties brought by drought to the people in Northern Kenya?

Summary:

- This guideline is about drought and its impact to pastoralists, who are the predominant people living in Northern Kenya. The semi-settled and settled people are also included as targets to mitigate drought's impact.
- The characteristic of drought in Northern Kenya is that it comes gradually but ends when it rains. Since rainfall is unpredictable, pastoralists cannot forecast whether a drought may last for a single year or multi-year.
- The negative impacts of drought to the pastoralists, and semi-settled and settled people needs to be clearly understood before, necessary countermeasures such as natural resource development/management, enhancement of livestock trade, and diversification of livelihood measures can be examined.

#### **Drought to whom?**

In principle, drought and its impacts in the context of this guideline is that which is experienced by the pastoralists, the predominant people living in Northern Kenya.

First, if we just talk about drought, it may mean drought to farmers who are based in agriculture, who are impacted differently by drought from the pastoralists.

Secondly, the number of people known as semi settled and settled people living in settlements/towns has been increasing. One of the reasons is that ex-pastoralists who lost their livestock due to past severe droughts have come to the town centres to find other means of livelihood. They expect some income sources especially in towns where there are more economic activities. Again, due to several other reasons such as recent droughts and conflicts among ethnic groups, access to water and pasture near their settlement areas becomes difficult, males have to go farther to be able to access water and

pasture and as a result, women, children, and the elderly have to be left in their settlement with small numbers of livestock.

This guideline intends to address the impacts of drought on this group of people as well.

### **Characteristics of drought for pastoralists**

#### **Climate in Northern Kenya**

In Northern Kenya, a year is generally divided into four seasons: long rainy season from March to May, followed by the long dry season from June to November, then short rainy season between mid-November and early January, and lastly, the short dry season from January to March. In a normal year, the long dry season which lasts for about six months is regarded as the most difficult period especially for the farmers who depend on rain-fed agriculture. The pastoralists do not recognise a normal dry season as drought for as long as it rains at the end of the dry season.

#### **Recognition of drought by pastoralists**

Drought is identified by the lack of rainfall in a rainy season. For example, the long dry season lasts for six months, if it fails to rain in the following short rainy season, and falls in the following long rainy season, the dry period may extend up to 11 months. This is recognised as a single-year drought. If rain fails and the dry spell continues into the long rain season and only falls in the next short rainy season, the period of the dry season extends to 18 months. If the short rainy season fails again, then the dry period will be 21 months. A dry period lasting for more than two rainy seasons is recognised as multi-year drought, and the situation becomes severe. Since rainfall is unpredictable, pastoralists cannot forecast whether a drought may last for a single year or multi-year. In other words, no one can predict a drought, as it comes gradually, but ends abruptly as soon as it rains.

Based on this understanding, the pastoralists always expect the rain but tend not to start preparatory activities for drought, because they do not have to do anything when rain comes. Then, by the time they realise that a severe drought has come, it is already too late because the situation has reached a point of no return. This is the pastoralists' perception of preparedness, making resilience building difficult.

Further, under the influence of global warming and climate change, the frequency of drought has been increasing. Rainfall patterns have also changed. Pastoralists have pointed out that abnormal rainfall is being observed even during dry season. These changes are further negatively impacting the local communities who have continually suffered the impacts of recurrent droughts.

**What are the difficulties brought by drought and what should be done?**

**1. Pastoralist**

Natural resources

Once the pastoralists recognise a longer period of drought and consume pasture nearby, they start moving to places where water and pasture are available. They can survive for as long as they can find water and pasture to feed their herds. This is the pastoralists' coping strategy which has been adopted for a long time. However, there are issues that may hinder their coping strategy such as population pressure and other social factors that restrict their moving such as insecurity caused by conflicts with other ethnic groups. Due to these issues, less pasture and water are expected in their areas when drought comes. There is therefore need for natural resource development and management focusing on water and pasture as will be discussed in details in the next topical message.

Livestock trade

There are many factors influencing livestock trade in Northern Kenya. Pastoralists in general are not willing to sell their animals because of the prestige attached to owning a large number of livestock in their culture. Besides the "prestige" however, there are several other factors leading to inactive livestock trade especially during a drought spell (see the box below). These factors make spontaneous livestock trade in drought occasions difficult. There is therefore a rationale to improve the livestock value chain in Northern Kenya.

**Box. Drought makes the decision making on restocking and destocking difficult.**

*After suffering the whole dry season, livestock becomes weak and the market price becomes low. Then, if the government declares the drought, the market price drops down severely.*

*It is a difficult decision whether herders should sell animals at a low price to avoid potential damage from drought, or they should wait for the unpredictable rain in the coming rainy season.*

*After the drought, restocking is also difficult. When the rain comes at the beginning of the rainy season, people who have lost their livestock in the drought want to buy animals for recovery. However, only a few people want to sell their animals in the rainy season. When more people want to buy but few of them want to sell, the price of the livestock increases no matter how good or not their health condition is. This ground level mechanism is also need to be understood.*

## 2. Semi-settled and settled people

### Livelihood Measures

For people who have lost majority of their livestock, have only a small number of them, and live in a certain area, the magnitude of suffering from drought is severe. When drought hits, they are unable to move to find water and grass because they are already settled and somehow attached to the land. As water and pasture become scarce in the area, their livestock is lost.

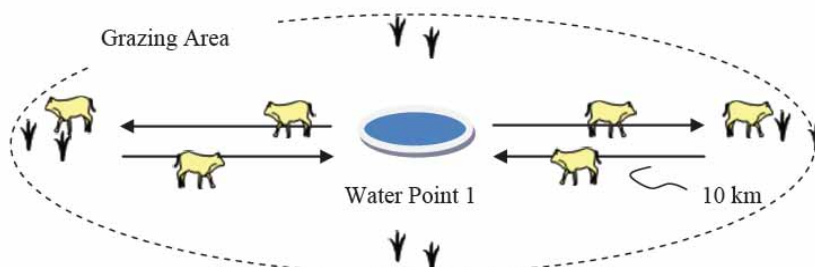
Due to the small numbers of livestock, they easily lose most of their assets on which they live, and hence become more vulnerable than before., leading to a vicious cycle of poverty. For this type of people (but not limited to them), diversification of livelihood is desirable in order to avoid risks.

## 4. How herds migrate in normal years, and why they die in drought spell

### Summary:

- Livestock herds basically migrate between a home village and grazing areas in a year.
- In a "dry season grazing area", the herds move daily between a water source and pasture rich areas within watering days' intervals..
- If herds cannot find a pasture within a ten to 20 km radius range from the water source, they will start migrating to another dry season grazing area.
- In a normal year, herds go back to the home village before their dry season grazing areas are exhausted in a dry season. However, in a drought spell, a number of available dry season grazing areas might not be enough for them.
- Herds will be damaged/lost by drought only if they have no place to graze.

### Movement in a dry season grazing area



Source: JICA Project Team

### Image of Movement in Dry Season Grazing Area

#### Acceptable Interval Days of Watering Livestock

|                         | <i>Wet Season</i>            | <i>Dry Season</i>              |
|-------------------------|------------------------------|--------------------------------|
| <i>Cattle</i>           | <i>3-4 days</i>              | <i>2-3 days</i>                |
| <i>Camel</i>            | <i>No drink<sup>1)</sup></i> | <i>12-14 days<sup>2)</sup></i> |
| <i>Sheep &amp; Goat</i> | <i>No drink<sup>1)</sup></i> | <i>3-4 days</i>                |

Note 1: It is believed that camel and shoats should not drink water during wet season for their healing.

Note 2: This is for Rendille/Turkana Camel. In the case of Somalia Camel, it is only five to six days under the Northern Kenya climate.

Source: JICA Project Team

**Migration in normal year**

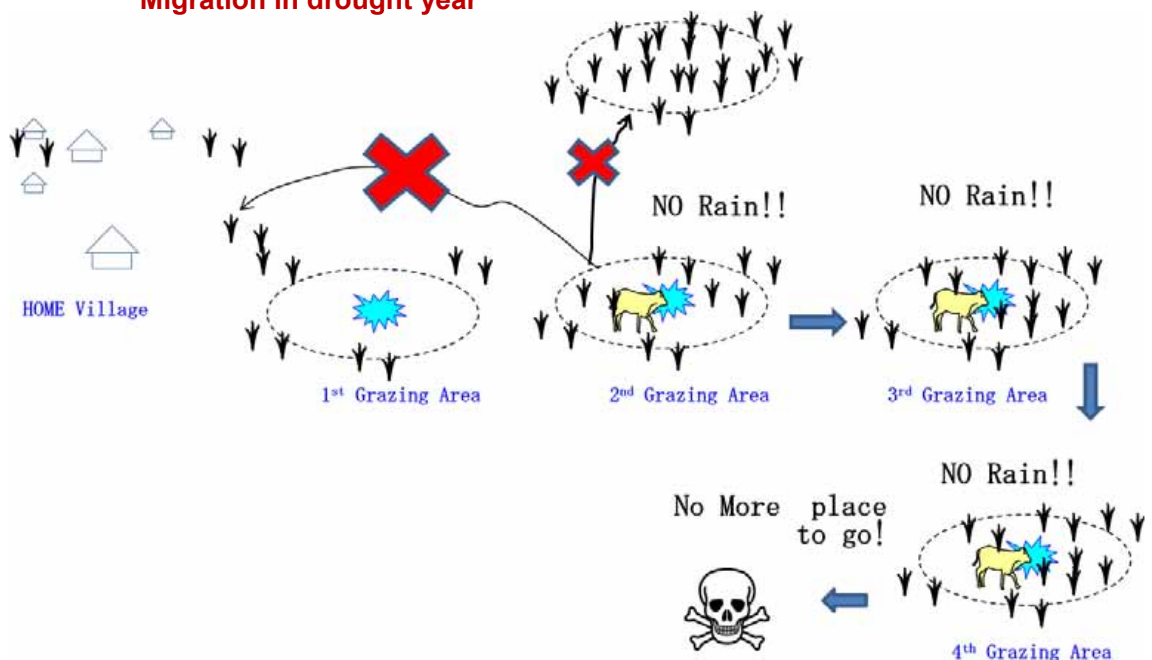


Source: JICA Project Team

**Image of Migration in Normal Year**

- (1) Herds usually stay near their village during the rainy season.
- (2) When the rainy season is over, and dry season comes, herds start to move to the dry season grazing area (hereinafter referred to as 'dry season GA') where pastures and water are available even in dry season.
- (3) If pasture or water is exhausted in a first dry season GA, they move to a next dry season GA.
- (4) When rainfall comes, and dry season is over, herds go back to their home village, and stay there for the whole rainy season.

**Migration in drought year**



Source: JICA Project Team

**Image of Migration in a Drought Year**

## *Part II*

### *Basic Understanding*

- (1) Herds have the same migrating pattern in a normal dry season as described in the illustration above.
- (2) If herders do not experience the rain, it means that it is the start of the drought. The herders then have to move to the next dry season GA.
- (3) Herds move to another dry season GA as long as they have their next place to go.
- (4) However, if they do not have their next place to go, due to physical or territorial limitations which may cause conflicts with adjacent ethnic groups, the livestock starts to die. This is livestock's death in a typical drought case.

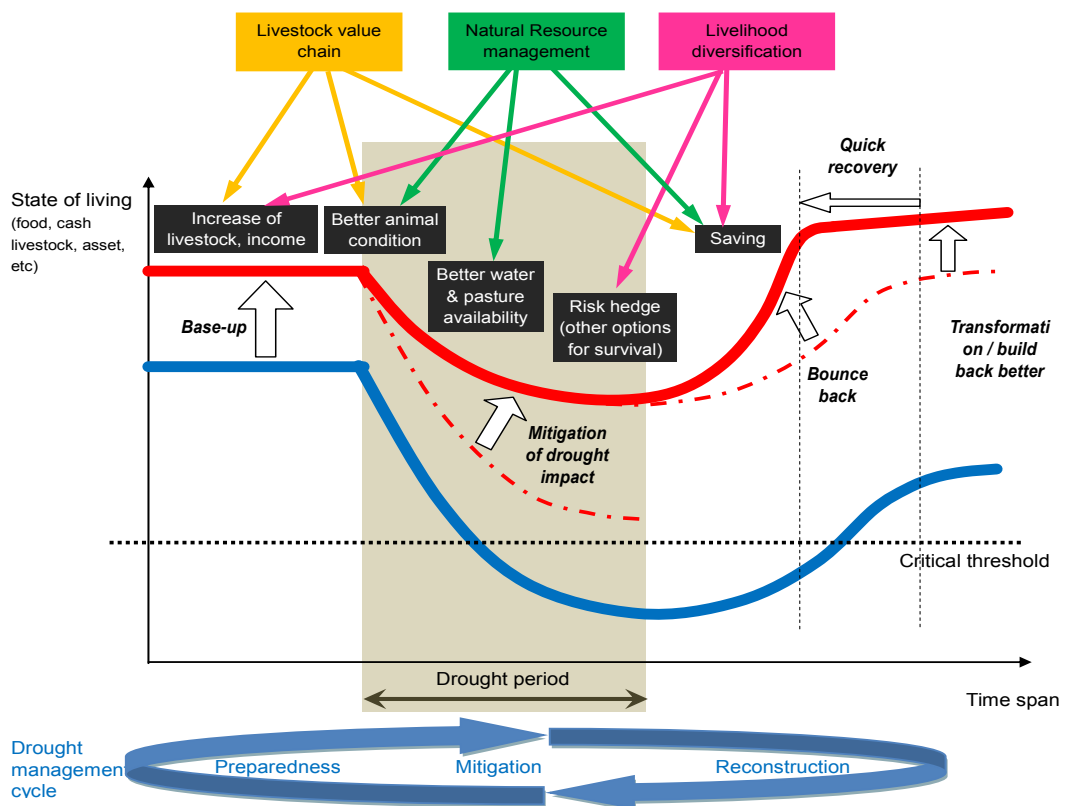
About  
"Drought  
Resilience"

## 5. What is drought resilience? How can it be enhanced?

Summary:

- The interventions and activities to improve drought resilience were as follows: 1) Improving the situation of normal time (base-up); 2) Minimising the impact of drought (mitigation); 3) Increasing the capacity of recovering (bounce back/ quick recovery) and; 4) Further development to self-sustainable society (transformation). Individual activities contribute to these resilient components in different ways. Think how each intervention works to improve drought resilience based on its conceptual framework.
- Community resilience is important for a sustainable resilience in the area. Although it is an important concept, the situation of the specific area should be considered in order to apply the idea of community resilience.

### What is enhancing drought resilience?



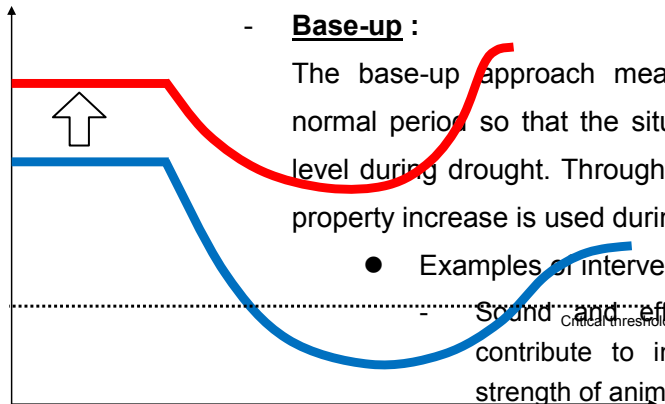
Source: JICA Project Team

**Conceptual Framework of Drought Resilience**



**Approach of enhancing resilience and possible interventions**

State of Living



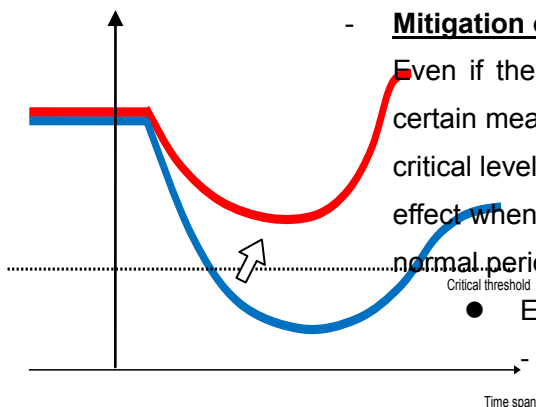
- **Base-up :**

The base-up approach means improving living conditions during normal period so that the situation does not deteriorate to a critical level during drought. Through base-up activities, stock of wealth and property increase is used during drought.

● **Examples of interventions:**

- Sound and effective breeding of livestock that can contribute to increase of livestock and enhance the strength of animals.
- Increase of the stock of livestock as their property through improvement of livestock market value chain.
- Improvement of livestock market that can increase savings, which can be used to restock after the drought for recovery.
- Development of water resources that can make unused pasture usable for livestock during the dry season, and expanding the dry season grazing area, which can result in reduced degradation of the pasture in the current dry season grazing area.
- Increase of income source and income through livelihood diversification that enables people to purchase and stock their daily needs.

State of living,



- **Mitigation of drought impact :**

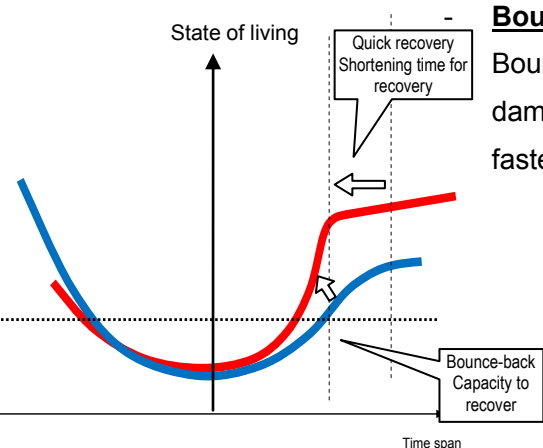
Even if the state of living is the same during normal period, taking certain measures can minimise the impact of drought not to reach the critical level of damage. Even though the mitigation measures will take effect when the drought starts, they should be put in place during the normal period. It would be too late to take action once drought starts.

● **Examples of interventions:**

- Adequate and timely livestock offtake can minimise the loss of animals during the drought through sensitisation and available livestock market.
- Improvement and maintenance of livestock health conditions through adequate animal health care, which can make the livestock stronger and increase the resilience of the livestock to survive during the drought.
- Increase of water sources that can be used during drought

to increase the available pasture to feed livestock.

- Management of rangeland and pasture to ensure reserves for the drought period, which are fundamental sources for herds to survive during drought.
- Dispersing risks of drought damage by increasing their options for survival apart from livestock as their livelihood, which is especially vulnerable to drought.
- Equipping with alternative livelihood means that can either directly help their survival during drought or indirectly contribute by increasing their savings instead of selling emaciated animals during the drought period.
- Stocking of resources such as hay, food, cereal banking, and saving of cash to be consumed during drought.
- Establishing collective management and support system (e.g., fee collection for maintenance so that repair can be done timely with the saved money).



**Bounce back / Quick recovery :**

Bounce back is the capacity of people to recover from the drought's damage to the pre-drought state. Some measures can help recover faster after the drought.

● **Examples of interventions:**

- Increase of savings through:
  - As individuals: other income sources than livestock, and early off-take of livestock.
  - As a community/group: fee collection and saving of water, Village Community Banking (VICOBA), livestock trade fee, etc., which can be used in recovering from drought damage.
- Restocking and rebuilding lives with savings. *(However, if this activity is totally carried out by the external support, it does not enhance the resilience of people but is merely a relief aid.)*
- A certain approach of natural resource management can improve in the savings and preparedness to avail resources during drought through fee contribution.

- **Transformation :**

The rebuilding of their living is not just to recover from the pre-drought level, but also for them to develop further.

### Community resilience

Community resilience can be used in comparison to an individual's resilience, in which the community members handle the issue as a whole, or in comparison to a government-driven resilience.

Some of the activities to mitigate drought can be practised individually, such as running a small business for an alternative income source, and saving, or breeding and selling of livestock.

Why is 'Community Resilience' important?

*"the whole is more than the sum of its parts," which means that a collection of resilient individuals does not guarantee a resilient community (Norris H. Fran, et. al, 2007)*

Community resilience can be understood from a different point of view. It could be as a set of capacity for effective organisational behaviour, or as a strategy for promoting effective disaster readiness and response. However, what is complicated is the variation in the meaning of 'community'.

It may not be the case always but typically, a community is an entity that has geographic boundaries and shared fate. However, the situation is different in Northern Kenya. The communities are composed of built, natural, social, and economic environments that influence one another in complex ways (Norris H. Fran, et. al, 2007).

*Community Resilience is defined as the existence, development and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability and surprise. Members of resilient communities intentionally develop personal and collective capacity that they engage to respond to and influence change, to sustain and renew the community, and to develop new trajectories for the communities' future (Magis, 2010).*

About  
"Community"  
in Northern  
Kenya

## 6. Concept of 'Community' in pastoral society is different from one in an agriculture-based society

Summary:

- In general, the pastoralists in Northern Kenya are not bound by geographical area, but tied by traditional bonds such as clans. Even though the relationship and sense of belonging is strong within clans, their daily living is rather independent.
- Unit of 'community' can be a clan, kraal, administrative unit, neighbouring settlers, etc., depending on the context.
- If 'community' is not specified in community action plans, nobody will take them up as their own activities.

The community-based drought resilience approach emphasises initiatives and actions by the community. However, the concept of community is not commonly understood by all the stakeholders. To make the community resilience function, it is necessary to apply a feasible unit of the 'community' based on the actual roles and functions of the committee and the people's relationships.

### **Community in agriculture-based society**

In agriculture-based societies, people are strongly attached to their land which is the fundamental means of their livelihood. Therefore, people are bounded by geographical area. Residing in a particular place, cooperation grows and people share public goods and common properties. Since agriculture can feed more people in a certain area, population density can be higher than that of the pastoral society. This makes the bond among the agriculture-based communities stronger, making their communal activities easier.

### **Community in pastoral society**

In a pastoral society, 'community' means a sense of belongingness and a common identity. Although it sounds similar to a prevailing common

definition, the major difference is that a pastoral community is not bounded by a certain geographical area. Their basic living involves moving to places where they can feed their animals. Therefore, even those who have the same belongingness do not reside together.

In the current Northern Kenya society the word 'community' has been widely used by different people with different interpretations. When the government officers use 'community', it means the general public or society in relation to 'government'. When an administrative chief says 'community', it may signify people residing in his administrative zone. For a herder, it might be his kraal or those that graze around. When a clan elder, however, mentions 'community', it may specifically mean the members of his clan who are not necessarily living together in a particular geographic area. For the owner of the water pan, the 'community' can be all the users of the water pan, including the immigrants. The last two concepts may typically represent the concept of community in a pastoral community. People have a sense of belongingness and unity through the 'community', but they are not bound by their area of residence. This means that even neighbors settling next to each other, or those camping together, may not belong to the same community in their sense.

### **Community of pastoralist and drought resilience**

The sense of the community highly influences the pastoralists' attitudes and the specification of the unit of 'community' can determine the functions of communal action.

When outsiders propose community-related activities, it is crucial to judge the size of the 'community' in consideration of traditional ties, the people's movement, etc. If the communal activities are introduced without specifying a particular group of people, nobody will care as people keep on moving even if settlements are formed. This sense of community is also the foundation of the independent lifestyle of pastoralists, which makes communal work and collective management unsuitable.

## 7. Distinctive ideas and attitudes of pastoral communities in Northern Kenya

Summary:

- In addition to the characteristics of the pastoral community, the specific context of Northern Kenya has been influencing their culture and society.
- Both traditional customs of Northern Kenya and cultures introduced from outsiders are crucial factors in enhancing community resilience.
- Therefore, it is necessary to understand characteristics of the target community correctly prior to making a plan for community resilience.

The function of community resilience highly depends on how a community functions as a social unit. Different factors such as traditionally embedded cultures and customs in the society, recently introduced systems, and other external influences will make the feature totally different.

For example, the Community Managed Disaster Risk Reduction (CMDRR) approach is an established methodology of participatory drought management. However, it may not work as expected when a society is incompatible to the pre-conditions of the methodology. Therefore, it is important to understand the target community in a particular pastoral society. The preparation of the people's minds can be a pre-condition in introducing a certain approach. It is inevitable to assess the readiness of the people towards collective actions and democratic decision-making, people's attitudes concerning belongings to the community, and their level of dependency and self-reliance in their development.

Resilience approaches have often been developed by outsiders through experiences from other areas, wherein the situations and peoples are different from those in Northern Kenya. Therefore, some of the concepts and ideal situations will be unsuitable to the understanding and customs of pastoralists in Northern Kenya. What will happen if such concepts and approaches are introduced to the pastoralist's society? What should be

done if it is necessary to introduce concepts and approaches that are different from the customs of the target community?

The following will discuss some of the noteworthy characteristics and behaviours of the people of the pastoral society in Northern Kenya that influence the establishment of community resilience.

What is important to be understood and to be emphasised is to recognise gaps between what external agencies expect and try to achieve and, the actual situation of pastoralists' societies.

*“What is important is what actually happens rather than the unpredictable inconceivable issues”*

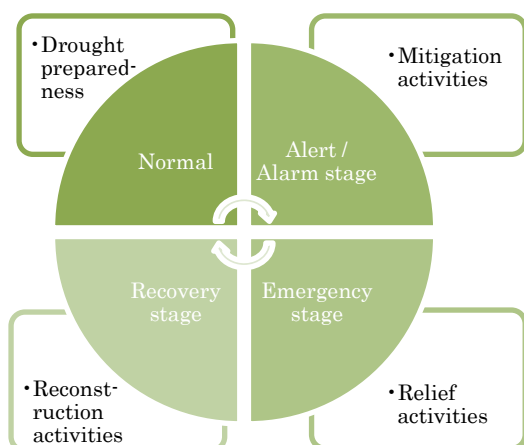
#### ***Observed attitude of pastoralists***

Pastoralism is a way of life in which people adjust and get accustomed to the situation of unpredictable environment by migrating to other areas. As mentioned in the earlier sections, drought is a typical environmental feature of unpredictable disaster. What is complicated in drought is, unlike other natural disasters, its devastation gradually evolves but the situation gets back to normal once a sufficient amount of rain comes. Due to the unpredictable environment and lifestyle of migrating, being adaptable to the occurring situation is more practical and efficient than planning for an unreliable future.

In this context, the longer term development of a pastoralist life in a certain permanent place can not be effective in their migrating habit. Since they need to move when the resources are insufficient, it is not beneficial to establish their life in the temporal settlements.

#### ***Prevailing concept and approach of external support***

Preparedness is one of the important drought management components that should be carried out during normal period. This means that people are expected to enhance their preparedness and take action on what is unnecessary at the present but, for an uncertain future. The activities meant for drought preparation may not be very vital for them since their benefit is unrecognisable during normal time. It may be obviously fairly important from the viewpoint of agents who support enhancement of



Source: JICA Project Team  
**Drought Management Cycle**

resilience of the people. The concept of preparedness is however significantly different from the understanding and the habit of the majority of pastoral communities in Northern Kenya. Although, the activities for preparedness should be routine or activities that should be done during normal time; it can be difficult to make an effort on the unseen difficulties due to their different lifestyle and cognition. The same thing can happen if the concept of maintenance is to be applied. Has the maintenance been necessary for the pastoral life? Pastoralists are migrating to other places when they have finished

their resources at an area, and come back when the situation naturally recovers. Therefore, the concept of maintenance can be new to them, even if it could be a common understanding among others.

**Box. Experience of ECoRAD in the Maintenance of Water Supply System by Pastoralists**

*It has been observed that people are not willing to contribute or make an effort for the advanced preparation for uncertain breakdown of water supply structures. Although they say water supply is very critical because water is their life and accept that it is important to repair breakages, contributing is something different for them. Although there are some people who are convinced and have contributed, they still do not have a clear idea on the contribution for the preparation for unexpected breakages and problems.*



“Strong identity of clans while living independently. What does communal action mean for them?”

**Observed attitudes of pastoralists**

Social independence

The bond within each clan remains strong. The clan is the basic governance system and decision-making unit consisting of traditional elders. A social unit (differs in various ethnic groups, e.g., clans, Artha in Borana community) traditionally cooperates in deciding the grazing patterns and resolving the problems within their clan and of inter-clan relations. Although people have strong identities and sense of belongingness to their clans, their daily life is rather more independent, especially in livestock rearing and trading. Due to the nature of pastoralism, members of a social unit who are physically together change in different contexts and times. This is also typically different from agriculture-based society where people can meet and work together with the same members as they are bound by the place.

Network for mutual support

Even though they have a culture of contributing for their needy fellows, people would rather rely on mutual help that is established through individual networks when they have problems or issues.

Common property

Livestock, which is the most important asset of the pastoralists, is managed independently by individual homesteads regardless of the clan's unity. The pastoralists, due to their mobile lifestyle, primarily do not own communal property apart from natural resources such as pasture. Therefore, it has not been necessary to work collectively for management of common facilities. This means that management of common facilities is not familiar to many pastoralist communities.

**Box. Simply looking for another source if one does not function?**

*Pastoralists have been benefiting from externally introduced infrastructures such as boreholes, pipelines, water pans, and roads. They appreciate these infrastructures a lot. However, when the system breaks down, the people just go back to the original situation and seek for other available sources instead of repairing the broken down system. For example, it was observed that when a water pipeline had a problem and no water was available, many of herders just moved away.*

***Prevailing concept and approach of external support***

It is now taken as a standard that infrastructures and common public assets are to be managed by the community. It is also stated in the Water Act of 2002 that developed water resources should be owned and managed by the concerned community. However, pastoralists have the tendency of *laissez-faire* depending on uncontrollable natural resources. The mindset of collective responsibility influences the management of communal property.

***Box. Purely their own attitude? Or affected by other power?***

*The abovementioned tendency originated from the pastoralist's lifestyle, in which herders can just move to look for other resources when depleted in one area. Besides their original lifestyle, having free emergency relief aids strengthened and verified this kind of mindset, which does not consider ownership and maintenance by the community. Since several water sources and other infrastructure were established without much involvement from the community, materials and equipment donated and left without any further guidance and support, people simply use them until they are perished. Basically, these circumstances encouraged free riders in the use of public assets.*

*Moreover, the concept of management and maintenance of common resources has been further discouraged by the continuous external support. Though a project that has introduced a new structure encourages its maintenance by the community, other external agencies come to repair the asset when it has a problem. This discourages the community from maintaining the structure on their own. In addition, the tendency by donor agencies to support the one having the worse situation ends up with the community leaving the situation worse than before.*

Under such background circumstances as mentioned above, the radical introduction of communal management of public property can distract their social structure and power relations. Having an independent individual lifestyle, introduction of common property that cannot be managed by the community may work as a driving force for mismanagement by a limited number of people. For example, the establishment of a communal fund through fee collection for water can easily be manipulated for misuse if the community is not capable enough to manage it. Since the pastoralists' concern is just to get water and not the management of the money that they have paid and left in someone else's hand, there are no supervisory systems of management from the community.

“Is Traditional Leadership the Same as Expected Leaders for Development Activities?”

***Observed attitudes of pastoralists***

Pastoral communities traditionally have their leaders, mainly the elders of the clans or similar social units. However, they are different from other type of representatives of the community in relation to the currently prevailing democratic governance of a certain geographic area.

Most of the tribes have a structure of the council of elders that is the main decision-making body of a certain unit of their society. Elders are normally selected from a prominent family, inherited or appointed rather than through democratic election by the community to represent the rest. Leaders are respected and people listen to and follow their decisions. Often, due to the mobility of the pastoralists, leaders advocate and lead people who are ideological or customarily belonging to their group but not represent the geographically bounded people. However, it does not seem that there are any leaders other than the elders in the pastoral community. It is not common for a general community to discuss and decide their representatives other than their traditional elders.

***Prevailing concept and approach of external support***

Community development or community-managed drought resilience assumes that community leaders represent the voice of the community. A prevailing approach is selecting a committee to represent the people residing in a certain area. The committees are expected to reflect the opinions of people, communicate with the implementing agencies, disseminate information to the whole population in the area, and lead them to take action collectively.

However, the idea of selecting representatives to work on behalf of the community may be different from their understanding of leaders. Therefore, even if external agencies try to select representatives of the community through public meetings, people may not select those who the external agencies assume they will. Furthermore, local people may not recognise the elected committee as the leaders who represent the community.

“How do people comprehend what outsiders say?”

**Observed attitudes of pastoralists**

The perspectives and understanding of the pastoralist people in Northern Kenya are different from what external people expect. What is intended by people from the outside can be understood differently. The cognitive system of a pastoralist is different, especially because the basic lifestyle of pastoralist is different from a settled society. This means that a single conversation or one-off discussion cannot convey the message properly to people. Furthermore, the unclear understanding of people can easily be manipulated and controlled by a few vocal people.

**Prevailing situation of external support**

Discussions and consensus-making with the target community as a whole is considered as crucial steps in community development and community-based resilience enhancement. However, in many cases, certain projects face disputes or different actions from the community even though project officers have explained, discussed, and agreed with the community in advance. In the field, as often observed, when the people are not familiar with the introduced idea, their understanding differs between different people in the community. This causes confusion and distorted information can be disseminated afterwards. In other cases, due to difficulties in having a meeting with the majority when people are moving with the herds, the project discusses only with limited representatives. Although it is expected that the message is delivered from the representatives to other community members, information can either be intentionally or unintentionally misinterpreted.

**Box. Gender in pastoralist community**

*Division of roles by gender is clear in pastoralists. Men, especially young men herd livestock while women remaining in manyattas take care of young animals. Decision making is mainly done by elderly men in the clan. Men and women are not supposed to sit together in public gatherings. Due to this division of roles, the majority of participants of community barazas are elderly men while women remain in manyattas. The Voice of elderly men is absolutely strong and only a few vocal women can raise their voices in front of men.*

## 8. External support as one survival option

Summary:

- Communities are not merely passive recipients of the project. They are the principal actors of utilising external support.
- In the drought that affects Northern Kenya, people have been living together with external support and have developed their ways of utilising it for their survival.
- However, their way of survival with external support may not be sometimes compatible to the intentions of the external supporters.

### **Unintended impacts of past experiences with external support**

The societies from drought-affected Northern Kenya have been developed with external inputs, which have been often far from their endogenous development path otherwise. A significant amount of resources that include materials, infrastructures, technologies, systems, financial resources and human resources have been brought from outside for the development of the society. As a result, external support has been taken as a substantial part of their development and change. Besides, it is still expected that external influences will expand further even after drought emergency aids have already shrunk. External influences include humanitarian aid, economic development of the surrounding areas, as well as new technologies.

Different lifestyles, materials, technologies, ideas, and systems have been brought into the pastoral society even though the people are not well-prepared for them. While it takes time to adapt to different lifestyles, ideas and systems, ready-made materials and new technologies have simply been introduced. These external issues have diversified the society creating a gap between those who can adopt them and those who cannot. The external support has also created a power relation within the society that is different from the traditional one. Those who adopted the external idea and systems came to receive individual benefits through the positions working with the external agencies.

### People's understanding on external supports

Apart from the macro influence on the society, several decades of external supports influenced the people's mindset creating dependency on others as their way of survival. People learned how external support can benefit them the most from the perspective of their survival.

✧ Mind of free provision

*'It is the duty of the external agencies to give. If one does not give, that organisation is not needed'.*

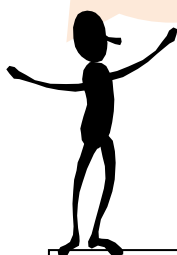
*'If the organisation does not give profit, we will just wait for other organisation that will give, instead of making an effort by ourselves'.*

This is escalated by the external supports that tend to support the one with the worse situation. In that case, will people try to make the situation a bit better with their own effort, if this will reduce their chance to get further support?

✧ External support is one of their options but not an absolute or only option. People have a choice whether or not to adopt external support. Then, they choose what to utilise for their benefit within the provided options.

✧ People negotiate with external agencies to maximise their benefits. This is their tactic that has been developed through their interaction with these agencies (e.g., providing information that attracts donor's support, pretending to be good or by agreeing with the donor policy, etc.). These should not be understood as a form of manipulation or cheating, but rather to be taken as their reasonable survival methods that they have established from several decades of their experience with external support. Thus, these external agencies should understand and take the necessary approach instead of criticising it.

'Since other donors have been paying for sitting allowance, people will not come for meetings without payment'



Example of people's survival strategies towards external agencies:

- Pretending to be bad (pretending to be poorer than they actually are) to receive more support.
  - e.g., If the water pan has a lot of sedimentation; the donors tend to desilt the one with worse situation.
  - e.g., Telling how badly the previous donor support was implemented to attract further support.
- Understanding the trend of assistance and adjust their opinion and behaviour to please the donor.
  - e.g., Representation of the community, equal opportunities, care of the disadvantaged and underprivileged, women's participation, etc.
- Leading the donor to follow the same way as other donors have done.
  - e.g., knowing that the donor requires good participation from the community, some leaders ask the donors to follow the approach of humanitarian aid.

## 9. Different features and customs of different tribal communities

Summary:

- In addition to the pastoral cultures, the tribal customs and social structures also affect how the community adopts functions of resilience. Where there is a traditional, social and governing system, the newly introduced system can work when it is not controversial to the existing one and could be easily accepted if it is merged with the traditional system.

For outsiders and foreigners, like officers of international/governmental agencies and international NGOs, it is difficult to understand the characteristics a target community. One of the simple indicators that help their understanding is the type of large animals, such as cattle or camel that the people prefer. Of course, this indicator does not always provide a correct answer, but it may most likely give you rough ideas of a target community in terms of the following the aspects shown in the table below. It can be useful particularly when you do not have any information about a community in your first visit.

**Tendency of Rough Characteristics by Large Animals**

|                                       | <b>Cattle people</b>  | <b>Camel people</b>  |
|---------------------------------------|---|--|
| Characteristics of animal they prefer | <ul style="list-style-type: none"> <li>- Cattle has short interval of watering, one to two days only. Mobility is relatively low.</li> <li>- Cattle is grazer (prefer to eat grasses).</li> </ul>                 | <ul style="list-style-type: none"> <li>- Interval of watering for camels is long, 14 days in maximum. Mobility is relatively high.</li> <li>- Camel is browser (prefer to eat leaves on bushes).</li> </ul>                |
| Dwelling environment                  | - Due to the characteristics and low mobility of cattle, they prefer to stay (a) in wet & cool climate, i.e., highland, etc., (b) near a rangeland with rich grasses, and (c) near water points for animals.      | - Due to the characteristics and high mobility of camels, they can, or prefer, stay (a) in relatively dry & hot climate, i.e., lowland etc., (b) near the bush fields, and (c) at relatively far places from water points. |
| Livelihood                            | Such a dwelling style in wet climate enables them to diversify livelihood, in particular agriculture, if they want to.<br>They may run on <u>pure pastoralism</u> , or <u>semi-pastoralism/semi-agriculture</u> . | They rely on livestock activities only due to the dry condition in residential areas. Agricultural activities are not suitable in their place. So their livelihood may be mainly <u>pure pastoralism</u> .                 |

|   | <b><i>Cattle people</i></b>   | <b><i>Camel people</i></b>   |
|---|---|--|
| Mobility of families                            | Mobility is relatively low. Semi-settlement style may be easily dominant in community.  | Mobility is high. Pure migrate-style, or semi-settlement style might be major.   |
| Cohesive of a community on a geographical basis | If their livelihood is semi-agriculture, they stay in their residential area relatively long, in comparison with pure pastoralism. Consequently people may develop some relations based on geographical connection. | Their high mobility in a pure pastoralism lifestyle hampers them in developing relations based on geographical connection. |

Source: JICA Project Team

Major tribal communities, with which the ECoRAD project worked in Marsabit and Turkana County, have the following characteristics:

#### **Rendille Community**

- Strong clan identity (*no authority existing in larger community = decisions or solution of the issue beyond the clan are made through negotiation between clans*).
- Although there are social class based on age and families, there is no absolute supreme power. Basically, things are decided through discussions of elders.
- The traditional structure and leaders prevail over the government administrative system.
- Having a system of loaning camel called 'Maal system'
- The major livestock of Rendille is camel that is suitable for lowland dry area. This result in Rendille people are highly mobile

#### **Borana Community**

- Strong 'Gadha system' (governing system of larger Borana community) exists, which is the foundation of the community's government and management. This is the base of the strong identity of the Borana people.
- Aba herega system for water source management functions especially in the management of water pan as a part of their governing system.
- Due to their established Gadha system, their governing system is relatively well merged/incorporated with the modern administrative system.
- Borana is the cattle holding community, which requires good pasture and water. This results in Borana's settlement on highlands.



#### **Gabra Community**

- There is a strong traditional governing system called 'Yaa' in each clan where elders of households form a council of elders known as 'Dabela'.
- Gabra community has a cohesion system of loaning camel called 'Maal system' across generations and clans.
- Gabra people tend to keep large herds of camel, grazing mostly in lowland areas.

#### **Turkana Community**

- There is a council of elders in each clan as a decision making body.
- While there are still ties and supports within the clan, there is no strong governing system and people are more autonomous.
- Administrative system has been relatively merged with traditional system. Administrative system often prevails over the traditional. The development issues are led by administrators.
- Turkana's main livestock is the cattle in mountainous areas, and camel in lowland areas.

#### **Box. Difference in decision making between Borana and Rendille**

*Generally, in Borana community, elders have a central role in decision-making .. The heads of the village (Abba Olah) and heads of the homestead (Jars Moga) have the responsibility to organise an elders' meeting if there are any issues. The decision made in a certain meeting should be followed by all of the community members. However, as most of the elders are illiterate, it is difficult for them to discuss current development issues or government policies. Thus, new groups such as youth group, women group, and committees are invited to join the discussion with the elders. Once a decision is made, the new groups are expected to be the main players to implement it.*

*However, in comparison with the Borana society on the highland of Marsabit, government administration and political influences are relatively low in Rendille area. Both the Rendille Descent and Age systems establish social relations and structure of the daily life and livestock management in the society. Elders' meetings are the general way to solve problems both within and among settlements. Similarly, in the Borana for the development matters, new organizations or groups are invited to join the discussion with the elders.*

**Box. Difference in decision of movement of herds between Borana and Rendille**

*In Borana community, the decision on movement of herds is not made by the herders. When herders find that the natural condition is hard for the livestock, they will first report it to the livestock owners. The livestock owners will then report the situation to the local chief and ward representative in case there is no place to go within their community land. If the chief and ward representative receive many reports from the livestock owners, they will call for an elders' meeting to confirm the situation and collect information. When they have gathered enough information, they will hold again a meeting to make a decision on the destination to move to. Then, the local administrators and elders will visit the place, negotiate with the local chief and community elders there, and ask for a permit to move in. Finally, the decision is sent to the herders so that they can start moving.*

*Different from the Borana, the Rendille who leave most of the responsibility of migration of herding camps to the herders. Camel and cattle camps are usually big and all the animals from the same settlement or clan are gathered. The young men warriors are in charge of such camps.*



# **Part III**

## **Lessons for Better Community-based Drought Management**

Based on the basic understanding mentioned in Part II, lessons obtained through the ECoRAD Project are shown for better community-based drought management. Major structure here is 1) introduction, 2) lessons for community-based project ~ general perspective, 3) drought management at community level ~ more specific topics, and 4) institutional issues of community-based drought management. Lessons shared here vary from general level to specific CMDRR approach.



## 10. Lessons for all community-based drought management projects

Summary:

- The CMDRR approach has long been applied widely in Northern Kenya, and ECoRAD has adopted the approach in the Project.
- Lessons should not only be referred to CMDRR specific activities but also to other community-based drought management activities.

CMDRR has been widely applied for more than ten years in Northern Kenya and was initiated by ECHO. ECoRAD also adopted the CMDRR approach from its inception.

The CMDRR approach is considered one of the specific approaches and has a fixed procedure. There are lots of important elements of the CMDRR approach that can be applied in other community-based projects in general. Therefore, lessons obtained through the experiences in the ECoRAD project should not be referred to for CMDRR specific activities only, but also for other community-based drought management activities. Based on the above understanding, lessons are compiled hereinafter for better community-based drought management in Northern Kenya.

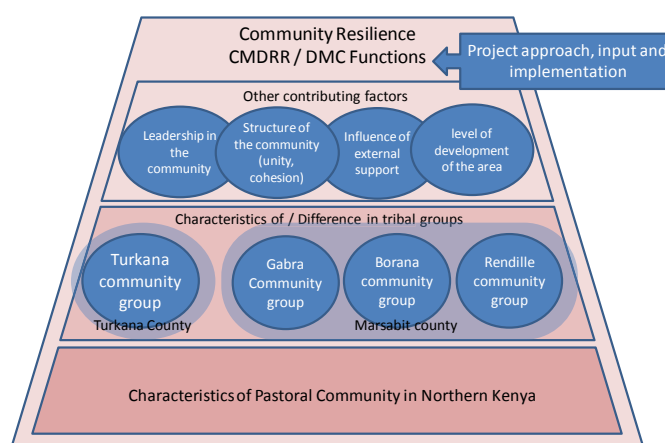
First, general lessons based on the understanding of the pastoralist community are presented, and then the specific lessons through the CMDRR approach are then shown.

## 11. Tailor-made approach rather than standardised approach based on the characteristics of the target community

Summary:

- When targeting a 'community', take the unit in the context of the society as well as the specific activity. Start with activities that can be conducted based on traditional community.
- Target the communities that have some foundation or basic understanding of the planned intervention, or adjust the intervention in a way that it can fit in the selected community.
- Introduce triggers of change for future development even when the intervention is adjusted to fit the existing system and customs of the target communities.

Community resilience is highly dependent on how the community functions as a social unit. Different factors such as traditionally embedded culture and customs, recently introduced systems, influence of the external environment and inputs will make the feature totally different. The framework below illustrates the major factors influencing the function of community resilience.



Remarks: - DMC means Drought Management Committee, which is supposed to be established under the CMDRR process.  
- There are other ethnic community groups in Turkana and Marsabit such as Samburu in Marsabit.

Source: JICA Project Team

**Framework of Major Factors Influencing Community Resilience**

## *Part III*

### *Lessons for Better Community-based Drought Management*

#### **Structure of the framework**

##### **Characteristics of pastoral community as well as each tribal group**

As mentioned in Part I, Northern Kenya has different features from the rest of the country in terms of socio-cultural attitude and perceptions, as well as developmental gaps. The most important issue concerning drought resilience as well as development is to seek for a unique optimal approach that suits the situation of Northern Kenya. It has also been pointed out in the National Policy for the Sustainable Development of Northern Kenya and Other Arid Lands that, the primary issues are protection and promotion of mobility as well as support of customary institutions, which is the fundamental way of life of the pastoralist in Northern Kenya. There are also several ethnic groups which have different social structures. Four groups which are mainly from Marsabit and Turkana have been taken as examples.

To achieve the above, it is necessary first to understand the situation and unique features of the pastoral community in Northern Kenya. Some typical features analysed through the ECoRAD project are as mentioned in Part I of this guideline.

##### **Other contributing factors**

On top of the fundamental issues mentioned above, there are four contributing factors related to socioeconomic conditions and human resources which obviously influence community resilience. For example; there is high community resilience where there is good leadership. This will be discussed later in the next topic.

##### **Activeness of community organisation**

The understanding and consideration of these three layers fully affect the activeness of community organisation. If favourable conditions are fulfilled and appropriate consideration is done, community organisation is expected to be active. In addition, project approach and inputs also largely influence the results.

#### **Lessons and suggestions**

when some standardised approaches such as CMDRR are applied, it is important to consider the abovementioned framework and modify them accordingly, rather than blindly apply such approaches. Some key suggestions are as follows (CMDRR-specific lessons will be discussed

## *Part III*

### *Lessons for Better Community-based Drought Management*

later):

#### **Unit of target community**

As mentioned before, the concept of “community” varies across different contexts and societies. In order to enhance resilience based on the community, collective management might be crucial (this is the so-called “community resilience”). The unit, through which collective management of common property could function, should be the familiar social unit. It is recommended to start with management based on traditional community (i.e. depending on the existing social structure, e.g., focus on clan, and then expand it further). If a larger unit or imposed unit is necessary to manage relatively big pans and rangeland, it should be understood that it will take longer time for them to get used to such communal management.

It is also highly recommended to collaborate with customary institutions where traditional management systems have been operational. In natural resource management, experience and accumulated knowledge of customary institutions are crucial; involvement of such customary systems is therefore inevitable.

#### Box: Directions of Consideration for the Four Ethnic Groups

- \* Collective management by community can work better in societies like Borana, where traditional system has a relatively strong structure (democratic leadership with laws and divided roles in larger community), by applying, adjusting, and strengthening their existing system.
- \* Administrative unit can be applied in societies like Turkana, where traditional structure is not very powerful or where exclusive and modern external structures have been relatively used with the traditional structure. There are also some places in Borana and Gabra areas where traditional structure has started to be merged with new government/administrative hierarchy.
- \* In societies like Rendille, where traditional clan is strong and there is no higher decision-making authority, activities can work better in terms of the clan unit. Considering management of the larger community as a future objective, it can be more feasible to start from the introduction of institutional capacity building in small clan-based structure.



## Part III Lessons for Better Community-based Drought Management

### Selection of approaches and types of intervention

“

*It is necessary to provide short-term tangible benefits for activities to take off until people can recognise the long-term benefits from the activities.*

“

*Start with the activities with individual benefit, but for long-term approach, the activities with individual benefit shall be eventually related with communal benefit.*

In consideration of the impression that majority of pastoralists in the area have not been practicing future preparation and planning, it is necessary to provide short-term tangible benefits for activities to take off until people can realise the long-term benefits from the activities. If it takes time to realise benefits from the new activities, they may lose interest. If they try to avoid any risk of starting a new activity, they will never know the goodness of the activity. Thus the short term tangible benefit can encourage them to try the activity to know its benefit..

Due to relatively independent social living, individual benefits are also important for the adoption of the activity in the beginning. When we think about a long-term approach, the activities with individual benefits should eventually be related to communal benefits. It has been demonstrated through the endline survey of the target community under the ECoRAD project that the responsiveness of the community highly depends on the benefits they felt in their current living situation.

Pastoralists have their own culture and understanding of life based on their nomadic pastoralist livelihood. As discussed earlier, such life is different from agriculture-based life or even lives in the relatively developed world. Moreover, most pastoralists are illiterate. In this sense, complicated and abstract conceptual systems may not be fully understood. Therefore, simple management systems are preferable which can be understood even by illiterate people.

## 12. Four contributing factors for active committee to represent the community

Summary:

- The success of community organisation and representative committee of the community highly depends on socioeconomic background and human resources. 1) Leadership, 2) community structure, 3) external influence, and 4) level of development were identified as critical issues that influence the function of community organisation such as drought management committee (DMC).
- These factors should be considered and reflected during selection of the project site, planning of approach, and selection of interventions.

As mentioned in the previous section and the framework introduced earlier, on top of the fundamental issues of pastoralist and tribal groups mentioned above, there are other four contributing factors identified which influence the activeness of community activities.

### **Analysis of contributing factors from the results of the sub-projects.**

There are some factors that vary across different units of the society or different geographical areas which influence the activeness of a representative committee, namely: leadership in the community, social structure of the community, influence of external support, and level of development. For each factor, the points are summarised and explained in the following box:

#### **Leadership in the community**

- Strength and character of the leader highly influence the functions of the CMDRR/DMC.
- Political and administrative influence can work both negatively and positively.

#### **Structure of the community**

- Unity/cohesion of the community can work positively.
- The cohesion/unity of the community can be influenced by traditional community structure, relation with administrative structure, and political division.

#### **External influence**

- Inappropriate approach of external support impede effective function of the CMDRR/DMC.

#### **Levels of development**

- Distance from major towns.
- Educational level.
- Commitment on other business.

## *Part III*

### *Lessons for Better Community-based Drought Management*

#### **Leadership in the community**

Leadership in the community includes political and administrative leaders as well as community leaders such as the clan elders, seer, and elderly men. Due to the influence of the national system and external support, educated young people are getting respected and becoming leaders in the community especially when issues related to formal administration, external support, new system, and technologies are involved. The level of respect differs across different societies. The characters of the leaders highly influence the function of community resilience. Existence of and collaboration with a respected, active, and voluntary leaders can encourage the community to take positive steps, while the negative attitude or reluctance of the leaders will strongly impede actions of the community and break the unity of the community.

#### **Structure of the community**

The structure of the community means cohesion of the community or traditional governing structure and decision-making. Where people are relatively united or there is social cohesion, collective management and action can work better. However, if several different groups are involved in the target community (e.g., when community is taken as an administrative unit), conflict can occur when the interests of the groups cannot be reconciled.

#### **External influence**

External influence is one of the strongest social structures in Northern Kenya especially because emergency and relief aids have been provided for decades. Further details shall be discussed in the latter part of the section.

#### **Levels of development**

Levels of development involve the economic, educational, and infrastructural situations of the people that affect their lifestyle, culture, and mindset.

#### **Results of analysis**

The above factors were found to influence the activeness of the committees based on the experience in the ECoRAD project as shown in the table below. In fact, it is clear that these four factors are assumed to influence the activeness of DMC/DC (Development Committee) assisted by ECoRAD.

## Part III

### Lessons for Better Community-based Drought Management

#### Analysis of Contributing Factors

|                                | Lokichoggio     | Loritit          | Milimatatu        | Kangakipur      | Lokiriama       | Lorengippi       | Eliye    | Kerio    | Lochuwa          | Lokichar        |
|--------------------------------|-----------------|------------------|-------------------|-----------------|-----------------|------------------|----------|----------|------------------|-----------------|
| Activeness                     | Mid             | Mid              | Low               | High            | Mid             | Low              | Mid      | High     | Low              | Low             |
| Leadership                     | High            | Mid              | Low               | High            | Mid             | Low              | Low      | High     | Low              | Low             |
| Community structure (cohesion) | Moderate        | Moderate         | Moderate          | Moderate        | Moderate        | Moderate         | Moderate | Moderate | Low              | Low             |
| External influence             | Large / Neutral | Middle / Neutral | Middle / Negative | Small / Neutral | Small / Neutral | Small / Negative | Small    | Small    | Large / Negative | Large / Neutral |
| Level of development           | High            | Low              | Low               | Low             | Low             | Low              | Mid      | Mid      | Mid              | High            |
| Total                          | Mid             | Mid              | Low               | High            | Mid             | Low              | Mid      | High     | Low              | Low             |

Remarks:

Activeness: evaluated by the team based on the activities of DMC/DC in the pilot community sites.

Evaluation of four factors:

- Leadership: the higher, the better
- Community structure: positive or negative
- External influence: not only the level of influence but also impact whether positive or negative
- Levels of development: middle is better; both high and low have difficulties

Source: JICA Project Team

#### Lessons and approaches

Lessons and approaches to be taken with regard to the factors mentioned above are as follows. These factors should be well examined during the selection of areas and representative members, and implementation of projects. External influence shall be separately discussed later in this part.

#### Leadership in the community

- Selection of community leaders should be organised properly,
  - e.g., - with enough number of participants,
    - make participants understand well the functions and roles of the committee; and approach of the project (e.g., no handouts)
    - make consensus with all the respected traditional leaders
    - set criteria with reference to the project (past experience, political background, understanding of the 'community development approach')
- Training of community leaders as well as training of the community to select appropriate leaders.
- Cooperation with traditional/respected local leaders is significant (even if they are not part of the committee).
- Prevention of negative influence of inappropriate leaders (moderate elimination, if possible).
- Close communication with the political and administrative leaders to enhance their understanding of the project purpose and approach.

*Part III*  
*Lessons for Better Community-based  
Drought Management*

- Neutral approach for fair involvement of different leaders.

**Structure of the community**

- To start with, target homogeneous/harmonised community to avoid conflict (tangible benefits can cause conflict between different groups).
- In case the project needs to target a heterogeneous community, the followings should be assured.
  - Fair distribution and allocation of resources and benefits between groups (fair representation, positive discrimination, consensus in the presence of all the groups). Involvement and enhancing the understanding of the leaders of each group.

**Level of development**

- It is possibly easy to introduce community resilience in the moderately developed areas. It is preferable to select such areas to start with.
- Where the central town is highly developed, or where development has not reached the area (e.g. poor infrastructure), the project can target peripheral areas in terms of smaller units such as village/*kraala*.
- Where social infrastructure is weak (e.g. educational level), simple management/preliminary management system shall be introduced (avoid complicated management system that cannot be monitored by the general community).

## **13. Step by step approach to fill the gaps between the current situation and the ideal situation**

Summary:

- Capacity of the community might be inadequate against what ideal community resilience entails. Introducing skills, facilities, and system that are beyond their capacity will even cause negative effects.
- Within the limited period and fund, step-wise approach should be taken, and the approach should be followed throughout the successive projects.

### **Pursuing community management needs longer process**

Pastoralists have started enjoying benefits out of several development measures that have been implemented in Northern Kenya such as road development, mobile phone coverage expansion, and modernised resource development (borehole, solar panel, deep wells etc.). To continuously enjoy these benefits, management of these infrastructure developments becomes necessary. However, as Part II reveals, pastoralists have not yet widely experienced communal management.

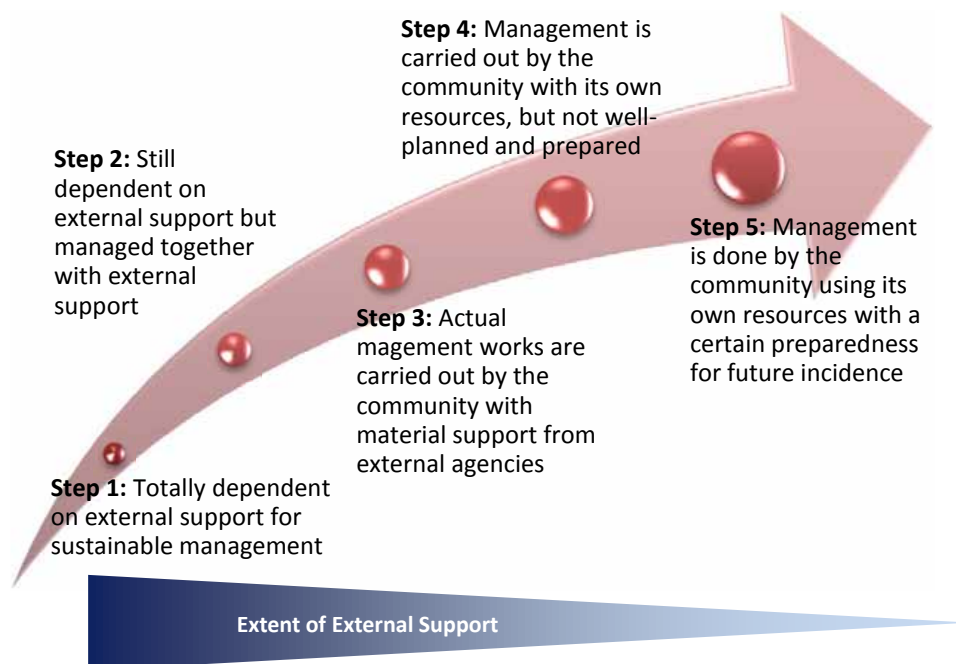
Pastoral people are facing different and mixed features, such as several traditions, newly introduced systems, culture created by external influence, and disadvantaged conditions. These are the current characteristics of the pastoral people in Northern Kenya. It is not possible to tackle all these issues at one time. On the other hand, these cannot be neglected because they can impede the pastoralists' benefits from new development.

### **Stepwise approach**

As a long-term strategy, it is necessary to develop the capacities of people to manage collectively, plan for the future, and prepare for drought. However, the approach to be taken through a project with a certain time period should be well deliberated. If the gap between the current situation and the aimed situation is significant, stepwise approach should be taken. The stepwise approach is illustrated in the next page.

## Part III

# Lessons for Better Community-based Drought Management




Source: JICA Project Team

### Stepwise Approach of Community Management

Most of the 20 communities assisted by ECoRAD, especially, the 11 in Turkana County, were at Steps 1 and 2. It was aimed to pull them up by building their self-reliance without easy handouts provision. At the time of writing this guideline, some of them had grown and were at Step 3 or even a bit higher although still not Step 4 like Kerio and Kangakipur.

It is important for all stakeholders to share the idea of this stepwise approach to build community management in Northern Kenya. Even by any approach applied such as CMDRR approach, pastoralists' community cannot suddenly jump to the last stage. Perseverant and persistent approaches to build self-reliant community management in the pastoralist world are required. To do this, donor/government assistance should graduate from relief and emergency type of aid (of course, severe drought still needs such assistance) which foster dependency, and go for approaches that normal community development uses in a harmonised way.

#### Box: ECoRAD Motto

- **CARP**  
Consideration  
Aftercare  
Repeat  
Perseverance
  - **Kujitegemea** (self-reliance) spirit  
To be built in target people
- 

## 14. Need to change communities' attitude of dependency fostered by previous assistance

Summary:

- Life of people in Northern Kenya has been nurtured through different interventions from external agencies, some of which brought adverse effects in terms of discouraging self-sufficient drought resilience.
- Since it has been embedded through decades of interaction, it is not easy to change in a few years. It requires consistent and coherent approaches to remove negative attitudes.
- Since external support has been accustomed in their survival method, alternative ways should be considered.

### **Project-level lessons**

Given the current situation of influence on community people by past different external interventions, what should be the approach of the project for the community people to foster a self-reliant attitude? The following are some recommendations:

- Study the approaches of past experiences with external support in the beginning.
- Approaches should be different depending on the depth of negative influence of past experiences rooted in the people.
- If past experiences are not substantial and have not caused much dependency, normal community approach can be adopted without much effort.
- If the approach of past experience is one that is similar to relief, agree with the whole community including politicians, administrators, and leaders on the development approach (shift from relief approach to development approach), i.e., provide benefit as community development and not as individual handout in the beginning of the project. Basically, easy sitting allowance and soda distribution are not intended.
- The starting point should be changing the mindset of the community through activities with tangible short-term benefits.



### *Part III*

## *Lessons for Better Community-based Drought Management*

- If initial investment is inevitable, it should be introduced with an appropriate withdrawal strategy (e.g., revolving fund for replacement of the invested materials).
- Stepwise activities with longer view shall be planned to remove dependency in people's mind (the notion of dependency has been embedded in people for several decades and will take some time to change their mindset).

Box: Handouts and Incentives, One of Difficulties Faced during the Implementation of Community Development in ECoRAD

- \* In a community site, an NGO previously tended to provide some incentive easily. When ECoRAD conducted activities including trainings and monitoring visits, the people always referred to the NGO's past interventions and requested incentive from ECoRAD. However, ECoRAD did not meet 100% of their requests.
- \* There are different reactions among people in different places. People in places where past donor assistances are less tend not to request too much. On the other hand, people in places which have lots of past donor assistance do so.
- \* Sometimes, DMC members were not appreciated by other community people under ECoRAD. ECoRAD did not provide easy incentives, and trained DMC to do things that they can manage by themselves. On the other hand, other community people expect incentive from donor from past exercises. (DMC was regarded as siding with the donor because DMC worked with ECoRAD) Other community people thought that DMC did not give any tangible incentives to them even though they received some incentives from ECoRAD. In fact, ECoRAD did not provide incentives to DMC. As such, the influences of past approach still affect the performance of the new approach, especially in building self-reliance.

## 15. Elaborating and modifying the committees' roles of CMDRR: reflection of specific context in Northern Kenya

### Summary:

- CMDRR approach has long been applied widely in Northern Kenya, and ECoRAD has adopted the approach in the Project.
- Through the implementation of the approach, some modifications and clarifications on the approach were made by ECoRAD, and some lessons were obtained.
- DMC, which is supposed to be formed in a “community”, should be an umbrella committee to oversee development issues and acts as a practical secretariat to chiefs and elders (decision makers). However, to realise this in Northern Kenya, it takes long a period and commitment in capacity building.
- A “community” for DMC is recommended as a small government unit, i.e., sub-location under the centralised government system at this moment. For this, there is an important precondition that accommodation of government system within traditional systems should be progressing. For tribal groups such as Rendille which have not yet fully accommodated the government system, traditional social units, which have strong cohesion such as clan, must be considered as the “community” for DMC.

Based on the general lessons learnt from the CMDRR approach that ECoRAD adopted, more specific lessons are discussed. Although they are specific, their essence can still be applied to other approaches of community engagement.

### **Community Managed Disaster Risk Reduction (CMDRR) approach**

This approach envisages to bring people together within the same community to enable them to collectively address a common disaster risk and collectively pursue disaster risk reduction measures with the four operational steps, namely: 1) participatory community disaster risk

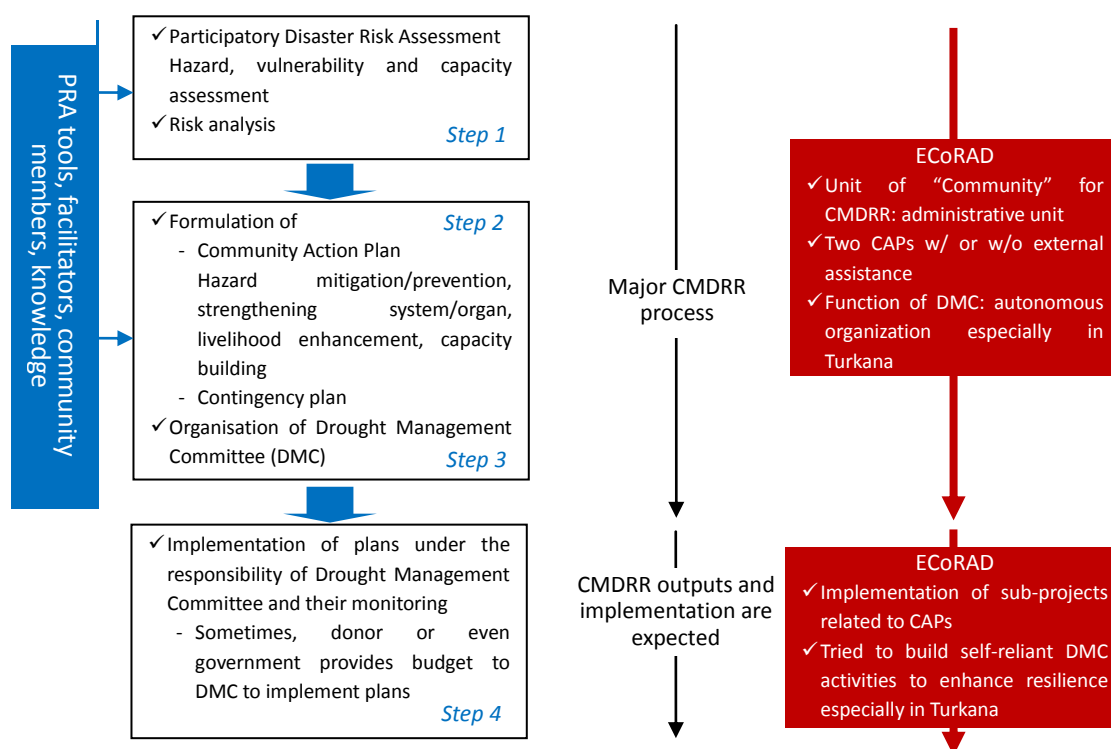
## Part III Lessons for Better Community-based Drought Management

assessment, 2) identification of disaster risk reduction measures (action plan and contingency plans), 3) organisation of Drought Management Committee (community organisation; name of the committee differs from one organisation to another), and 4) participatory monitoring, evaluation and learning.

“

*ECoRAD tried some modifications on the CMDRR Approach (as shown in the figure)*

Upon the implementation of the CMDRR approach in the context of Northern Kenya, the project tried modifying some uncertain points of the approach. Through the implementation, lots of lessons have been learnt. Here, thoughts on drought management at the community level are discussed.



Source: JICA Project Team, modified based on the CARE and Cordaid material

### CMDRR Process and ECoRAD Trial

#### Introduction

In Northern Kenya, there are mainly three types of social structure, i.e.: (1) traditional one such as clans already mentioned in Part II; (2) governmental administrative structure; and (3) committees mainly introduced by donors for the management of resources. Many committees have been established but currently, there are many dormant committees. The important considerations here are the functions of the committees and how these functions can be harmonised and intergrated

## *Part III*

### *Lessons for Better Community-based Drought Management*

with the two other social structures (traditional and governmental).

For water management, there is a water management committee for each water source. A livestock market normally has a livestock market committee. There are cases that rangeland management committees and/or environmental management committees handle rangelands.

In the CMDRR approach, the main committee to be established is the drought management committee (in other NGOs, these are referred to as disaster risk reduction (DRR) committees or CMDRR committees). The CMDRR approach seems to expect that this committee shall take the lead in realising the community action plan (CAP), which is prepared with the community people using the same approach. Some donors deposit funds to the bank account of the committee to implement some of the projects listed in the CAP. However, the most important issues from the sustainability viewpoint are the position of the committee in the current social structure and the basis for the committee to take the lead in implementing CAP for the community.

#### **Function of DMC for CMDRR**

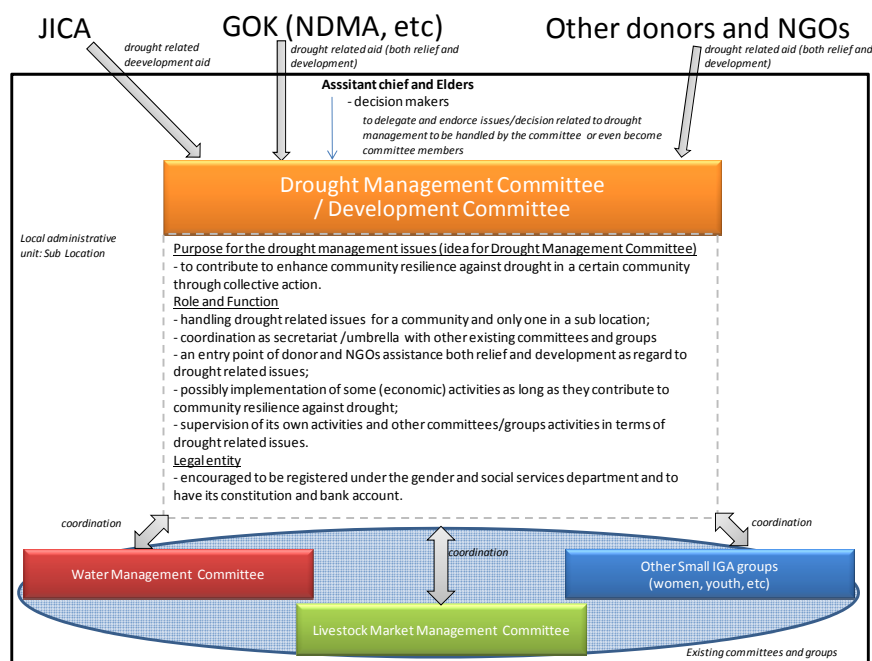
#### **Function of DMC in ECoRAD**

In the ECoRAD project, the concept of the function of DMC shown in the next page is adopted. This concept envisages that the committee has an umbrella function to oversee the development activities in a “community”. In this case, administrative boundary was applied especially in Turkana County. Issues identified through the experiences in the ECoRAD project are as follows:

- The committee should be officially positioned in the community’s social structure (relationship with elders and government officers);
- It is important for other community members to recognise the committee’s existence and function;
- It is better for the coverage and unit of the committee to follow traditional social structure. At the same time, a government unit is useful as an entry point of government and donor assistance. Practically, too big size cannot work (committee cannot cover physically); and
- Concrete and regular activities that benefit both committee members and community people. In other words, activities which are not immediate, do not give concrete benefits to individuals in the short run, and serve only the community as a whole may not be practically appreciated by most of the community people including committee members unless they are well-educated.

## Part III Lessons for Better Community-based Drought Management

All these are attributed to the pastoralist characteristics and the current situation of Northern Kenya, as already discussed in Part II and the earlier section of Part III. Therefore, all stakeholders must be aware of the necessity for long-term involvement to change such fundamental characteristics.



Remark: The previous World Bank project (Arid Land Resource Management Project) promoted community development committee (CDC). Also, the national government has an idea of a development committee to be established at the community level. Thus, ECoRAD proposed only one single committee which deals with all development issues, merging all similar committees

Source: JICA Project Team

### ECoRAD Model of DMC

#### Proposed function of DMC

In pursuit of ideal community resilience, the function of DMC is still proposed to remain the same. However, a longer process of capacity building is necessary to realise this function in a sustainable manner in Northern Kenya. Together with strengthening DMC in the short run, more emphasis can be placed on individual concrete activities of respective technical committees under the umbrella DMC, so that DMC becomes active due to the concrete activities of the technical committees. To make them work better, the above four issues should be taken into consideration.

“

*In pursuit of an ideal community resilience, the ECoRAD model is proposed to remain the same. However, a long process of capacity building is necessary to realise this function in a sustainable manner in Northern Kenya.*

## Part III Lessons for Better Community-based Drought Management

### Box. ECoRAD Trial on Concrete Activities by DMC

As concrete activities, ECoRAD trained DMC members, who were expected to take the lead role in the community, in the following three areas:

- Early warning system (EWS)  
DMC members were trained in linking with NDMA, EWS information, and mitigation measures for the EWS stages; and the members are supposed to disseminate the information to community people
- Reseeding  
Majority of semi-settled people highly depends on a small number of livestock left for milking. Reseeding and stocking of pasture will considerably help in feeding the livestock kept at semi-settled areas during the drought period. Knowledge on operating reseeded farm was given to the members, which are then expected to be disseminated to the other community people.
- Early off-take of animals  
Despite pastoralists' negative mindset, early off-take is one of the measures for drought preparedness. To challenge the current situation and change their mindset, training on animal off-take was conducted. Similarly, this knowledge is also expected to be disseminated to other community people

### Appropriate unit of “Community” and its relation to “Committee” in the context of CMDRR

#### DMC

The unit of “community” in the context of community-managed drought management is discussed. As argued regarding the DMC function above, this committee should work for the entire “community”; therefore, it is important to set the appropriate unit of “community” for better and more practical functioning.

Firstly, it is important to consider the traditional social structure, and then the governmental administration. It is best if the social structure has already merged with and accommodated the government structure. In this sense, the tribal community group is key in Northern Kenya. For Turkana community group, the government structure is relatively used by the community people. Gabra and Borana community groups are also accommodating the government structure. Rendille community group still works better under the social structure than the government administration. As for the government structure, the smallest and useful size in terms of the “community” coverage is sub-location (under the decentralisation system, “village” is the smallest unit but not fully operational, as of now). Therefore, sub-location is primarily proposed as the size of “community” for Turkana, Gabra, and Borana communities. In

““

*“Sub-location” is primarily proposed as the size of the “community” for Turkana, Gabra, and Borana communities. In Rendille type of community, social traditional structure, i.e., clan unit, is recommended to be used.*

### Part III Lessons for Better Community-based Drought Management

Rendille type of community, social traditional structure, i.e., clan unit, is recommended to be used (as time goes by, however, adoption of governmental unit is expected to progress gradually even for Rendille type). Of course, for tribal community groups that have strong social structure such as Gabra and Borana, smaller unit than the government unit can work better in the short run. To do this, including the Rendille, a sub-committee on a clan basis can be formed at the sub-location level. Next, DMC should be positioned properly in societies. According to the ECoRAD experience, DMC is recognised in some cases as the “elders’ eye” by the community people. Hopefully, elders and administrative leaders (chiefs, administrators) are harmonised and play the central role in development. DMC should be the practical secretariat of elders and administrative leaders (decision-making is still the same as the current situation), and the position should be endorsed by elders and leaders together with the local community people. As pointed out, even selected members of the committee may not be able to behave as the representative of the community in the short run. Thus, for the time being, DMC can be placed very close to the government administration, whose mission is to serve the community. Chiefs and administrators are recommended to be more responsible for development in their jurisdiction. And geographically, if one sub-location has wider coverage (scattered settlements), closer settlements could be one unit for DMC.

“

*For the time being, DMC can be placed very close to the government administration.*

“

*Further and most importantly, all stakeholders including county governments, national government, NDMA, and all donor agencies should share the community level structure and use it as a common community structure for their respective activities. Otherwise, different donor approaches will surely confuse the community people creating negative impact.*

Similarly, when DMC is formed in smaller traditional clan, DMC should be positioned under elders (decision makers are still the elders, but development issues are practically handled by the committee with due consultation with the elders).

Community people include pastoralists who migrate seasonally. Therefore, it should also be noted that the DMC formed in the sub-location mainly deals with settled and semi-settled community members.

Further and most importantly, all stakeholders including county governments, national government including NDMA, and all donor agencies should share the community level structure and use it as a common community structure for their respective activities. Otherwise, different donor approaches will surely confuse the community people creating negative impact.

## *Part III*

### *Lessons for Better Community-based Drought Management*

#### **Other committees**

Unlike DMC, other technical committees function quite sustainably because they handle more concrete works compared with DMC.

For these technical committees, “communities” are basically the users of the technical resources. In most cases, the ownership of the resources falls to the people living closer, who are also the main users. Therefore, committee members are normally selected from people who live closer.

#### **Selection of DMC members**

Selection of DMC members should be done based on the full understanding of the above by both facilitators and community people. So far, it seems that members have been selected without considering the function of the committee as providing public services. Most of the perception and/or expectation of the past members were just to get tangible benefits from the donors. It is difficult for such members to handle public development issues. Therefore, it is important to consider the members' educational level, especially for leadership. Other considerations include (1) geographical balance in the community, (2) gender equality, and (3) inclusion of vulnerable people.



## Part III Lessons for Better Community-based Drought Management

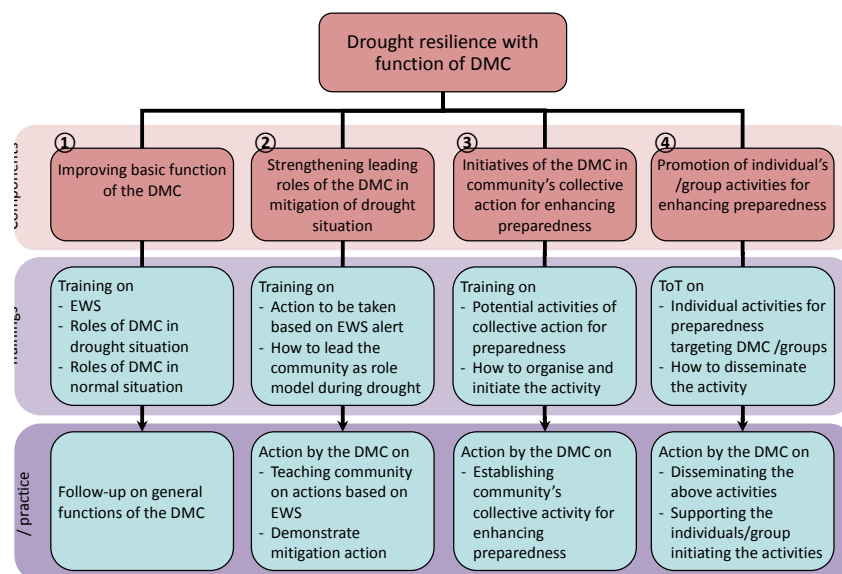
### Box. Some Examples of Relatively Active DMC assisted by ECoRAD

- Good leadership enhances the activeness of DMC  
The committee chairman of Kangakipur in Turkana is an education officer, who has past exposures on development. Therefore, he understands the concept well; proactively behaves and leads the other community people.

- Concrete activities enhance the activeness of DMC  
The following committees are pulled by concrete activities in terms of activeness.

| Community Sites        | Concrete Activities     |
|------------------------|-------------------------|
| Dirib Gombo (Marsabit) | Livestock market        |
| Shurr (Marsabit)       | Solar powered deep well |
| Kerio (Turkana)        | Livestock market        |

- Support to DMC by ECoRAD  
Further training after CMDRR workshop is needed for DMC to work more effectively. ECoRAD conducted the support following the concept shown below.



Source: JICA Project Team

### Conceptual Structure of DMC Development Supports

## 16. Preparation for implementation of CAP: government assistance for short term and self-reliance for long term

Summary:

- CAP preparation should be done with proper understanding of its meaning (not just “too ambitious wishing lists” for donor support).
- The CAP preparation process is recommended to be a regular process, preferably integrated into the county government planning process.
- Local government officers (chief and administrator) should play a central role in facilitating the obtainment of fund in the short run. In the long run, community (DMC) is expected to do the same role, after fully capacitated.
- Operation and management of developed facilities should be done by the community people. Accordingly, the involvement of the community from the early stage and building a sense of ownership are important.
- Monitoring and evaluation are recommended to be done by chiefs and administrators together with DMC in the short run.



*The roles and functions of DMC and what will happen after CAP preparation should be clearly explained to the community people in this process. To do so, facilitators' capacity also matters greatly.*

### **Preparation of CAP**

At the end of the CMDRR training, community action plan (CAP) is prepared. The idea of participatory development planning is good to come up with a plan; however, there have always been possibilities that project lists in CAPs are just too ambitious wishing lists. This might be because during the preparation stage, community people expect that donors will implement the projects or provide money. To avoid this, ECoRAD asked communities to prepare two different CAPs; one with external assistance, and the other without. By doing so, at least the opportunities were able to be given as they thought what kind of measures they can take to prepare for drought by themselves, though not all of projects listed in the CAPs without external assistance seem well examined ones. As such, the roles and functions of DMC and what will

## Part III

### Lessons for Better Community-based Drought Management

happen after CAP preparation should be clearly explained to the community people in this process. To do so, facilitators' capacity also matters greatly.

Substantially and ideally, it is desirable that the projects listed in the CAPs are sorted out by the community people themselves in terms of their difficulty and priority for realisation (government staff and donors can assist if the community has some difficulty) as well as their requirement for external assistance. This might be a bit early in general. Thus, government involvement is required, rather than just totally

| Box. Example of Sorting |   |                  |                          |
|-------------------------|---|------------------|--------------------------|
| Project                 |   | External Support | Without External Support |
| Priority 1              | A | X                |                          |
| 2                       | B |                  | X                        |
| 3                       | C | X                |                          |

Firstly the community and local government leader categorize projects into two; "with external support" and "without". Then in the process of seeking fund, community and/or government together approach possible institution to give fund.

As time goes by, it needs to monitor which one is funded by donors; others by government; whether another is completed by community efforts or not. This monitoring works will be discussed later.

relying on the community. Donor's assistance in this process is also important.

In this sense, the planning process should not be implemented just as an ad hoc process, but a regular government-led process (ideally, this should come from community initiative but such action is expected in the long run) with the chief or administrators of the county government (to be discussed later). Therefore, the process becomes part of the mandate of the government staff and the status of CAP will become official. Consequently, the possibility that projects listed in CAP are taken up either by the government or donors, under the initiative of the government, will become higher.



*In the long run, implementation of development activities by the community people is important and ideal. To realise this, long-term capacity development of DMC members is necessary. Therefore, government institutions and donor agencies can be the implementers in the short run.*

#### **Implementation of CAP**

##### **Implementer**

According to the procedure of the CMDRR approach, DMC is supposed to be the implementer of projects identified in CAPs. Ideally, this is true. However, referring to the characteristics of pastoralists, the idea that community people can implement some development activities is considered a bit premature. In the long run, implementation of development activities by the community people is important and ideal. To

## Part III

### Lessons for Better Community-based Drought Management

realise this, capacity development of DMC members is necessary.

Therefore, government institutions and donor agencies can be the implementers in the short run, as long as the infrastructures are available. Especially, the community people may not be able to implement big-sized projects that need huge funds and technique.

Even when donors or government institutions will implement the projects, the community should be involved. Even for infrastructure development, information should be shared from the beginning with chiefs and administrators at the local level with DMC or related committees.

If possible, it will be good if projects that the community can manage will be implemented and managed by the community people as the main actor through committees (supervised by DMC and technically implemented by technical committees and economic groups) together with chiefs, administrators, and elders. In this case, the donor's and government's role should be as a catalyst to provide technical advice and guidance.

#### Box. Implementation of Projects Listed in CAPs in ECoRAD

In the ECoRAD project, activities which need big investment such as construction of water pan and livestock markets and drilling of boreholes were done under the project. Meanwhile, interventions such as rangeland management, water management, and livelihood activities were done by the community people with committees or groups with technical assistance from the project as catalyst. In Turkana, DMC tried to be involved in the above activities including construction works for information sharing. These interventions implemented as sub-projects were referred to the CAPs prepared through the CMDRR approach.

#### General budgeting

For donor- or government-driven projects, the budget basically comes from the donor or government. Sometimes, contribution from the beneficiaries is required to build their sense of ownership of the project.

For projects which can be handled within the capacity of the community, budget can also come from the community.

Although there is no clear demarcation between the project components that can and cannot be funded by the community, a rough image of the classification of projects based on funding source is shown as follows:

**Rough Image of Possible Source of Fund by Kinds of Project Works**

| Kinds of Project Work   | Possible Source of Fund  |
|---|--|
| Big civil engineering construction works  | Government and donor   |
| Small- and medium-sized construction works  | Both government and donor, even community as long as they have enough capacity |
| Relatively larger resource management type such as rangeland management, water management | Local government leaders, elders and community in the form of committees       |
| Economic activities such as livelihood diversification                                    | Community in the form of small groups  |

Source: JICA Project Team

## Part III Lessons for Better Community-based Drought Management

To get funds for the projects, the government administration at the local level (chief, administrator) should become a central body to facilitate and connect the community with the higher government and donor for accessing the funds for investment. Ideally, DMC is expected to have such role. However, most DMCs have not yet been capacitated to be able to do such thing, as of now. In the short run, government staff should work as mentioned above, and the government and donors should continue to build the community's capacity (mainly DMC) for them to be able to do by themselves in the long run.

“

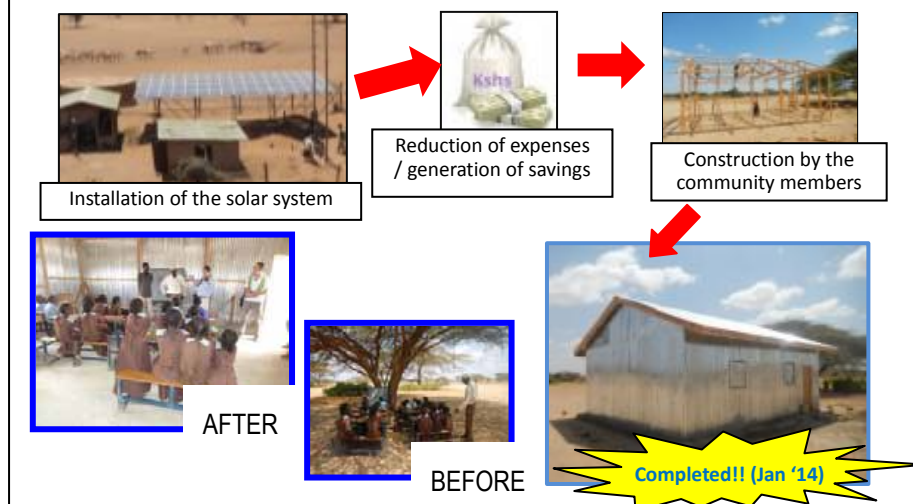
*In the short run, the government staff should become a central body to facilitate and connect the community with the higher government and donors to access funds for investment, and the government and donors should continue to build the community's capacity (mainly DMC) for them to be able to do by themselves in the long run.*

Once donor or government decides to provide funds for particular projects, they should be implemented. Projects which are supposed to be funded by the community may not be funded at present, because pastoralists may in general tend to behave independently, or even to put less priority on public benefits for a whole community especially if such a community is set beyond their traditional social organization. Hence, it may not be easy to raise funds through contributions from the community people. However, ECoRAD has a successful case, (see box below).

### Box. Community Development Fund in Marsabit Assisted by ECoRAD

The Project has installed solar power modules at Shurr Community in order to reduce operation costs of supplying and generating electricity from existing diesel generators. The savings newly created by the solar pump are kept in the bank to shoulder the repair and maintenance costs of the facilities. The community decided to allocate a part of the savings as "Community Development Fund". In 2013, the members of the Shurr Community gathered and discussed how to use this fund for the community. It was unanimously decided to use about KSh380,000 for classroom construction. In January 2014, they completed the classroom successfully.

This experience may not occur everywhere and continue to date. However, accumulation of this kind of experience and achievement is expected to make the community strong enough to combat drought without external support.



## *Part III*

### *Lessons for Better Community-based Drought Management*

If projects are small and a limited number of people benefit from them, contribution becomes relatively easy. Persistent education is required.

#### **Budget injection to DMC bank account**

The idea of CMDRR is to inject fund to DMC bank account and then a committee is expected to execute the development activities by managing the fund given by donor. On one hand, this is ideal for long-term projects. On the other hand, if a relatively big fund is given to the community people who do not have experiences and proper knowledge to manage it, the probability of misuse would be high. Further, this easy injection of money may send a wrong message to the community people that CAP implementation cannot be done without the money injected by the donor, indicating dependence or reluctance. Without proper understanding of the role and function of DMC, activities of DMC will not continue once they have used up all the injected money. Low sustainability of most DMC activities is reported from this viewpoint.

To avoid this, one strategy is to institutionalise the CAP process into the government process so that regular process of funding for CAP is secured. Also, it would be possible that some projects can be implemented as government/donor investment projects. Together with this, it is important to foster the proactive attitude of the community people and local government staff (chief and administrators) toward fund raising and management of fund in the long run.

#### **Operation and management**

Even if implementation is done by government agencies and donor institutions, the operation and management of the facilities are supposed to be done by the beneficiary, i.e., community people.

Considering the characteristics of pastoralists, it can be said that people in some pastoral communities tended not to be used to operation and management of “public” or “communal” resources well. Thus, longer commitment to capacity building is needed to address this. Continuous trials by asking them to operate and manage the resources, especially the provided infrastructures, are also important.

To do so, from the beginning such as during planning, the involvement of the community people should be secured, and some commitment during implementation should be embedded in the process. For instance, for infrastructure projects, one way is to ask the community people to do



*From the beginning such as during planning, the involvement of the community people should be secured, and some commitment during implementation should be embedded in the process.*

## *Part III*

### *Lessons for Better Community-based Drought Management*

some of the easy construction work by providing free labour. Another way is to pay some part of the initial investment through community (future user) contribution. Still another way is to ask for advance contribution of operation and maintenance fee.

Together with this, technical training on operation and management including maintenance should be conducted for the people who are responsible for the operation and management after the construction.

#### **Constant reiteration to committee members and many explanations to a wider range of community people**

In capacitating the community, the basic understanding of pastoralists should not be forgotten, i.e., they might be in general poor at imagining future abstract events and they are independent. Especially for projects related to sustainable communal resource management, explanation from outsiders to committee members for only a few times is not sufficient. They may not easily understand conceptual and abstract explanations. Hence, persistent reiteration to committee members is important. Further, even though they start to understand the idea, for some cases the committee members might not fully share the idea with other community members. Thus, many explanations to a wide range of community people who are also users, and not only to committee members, is also important.

#### **Monitoring and evaluation**

Again, according to the idea of CMDRR, the monitoring and evaluation of the projects should ideally be done by DMC. However, such abstract and conceptual activities are still difficult to be understood by the community people as of now. Therefore, the government/donor which implements the projects/programs is recommended to monitor and evaluate them in the short term. When it comes to overall CAP implementation, local government officers such as chief and administrators should be responsible. In principle, development in its jurisdiction should be one of the important mandates of the local government. In this context, the role of county administration in M&E and planning is also important. In the long term, community people themselves, especially DMC members, are expected to monitor and evaluate the projects/programs in the CAP.

## 17. Necessity to integrate the Community Action Plan (CAP) into the County Integrated Development Plan (CIDP)

### Summary:

- There have been so many CAPs prepared through the CMDRR approach. Some of the projects in the plans were implemented while others were not. There are CAPs that have been set aside too.
- The CAPs can be used as an input for formulating and updating the County Integrated Development Plan. The CMDRR approach should be officially adopted in the county development planning, especially the process after CAPs are formulated.

### **Current situation of community action plan**

There have been so many community action plans prepared through the CMDRR approach. Some of the projects in the plans were implemented while others were not. There are some cases in Turkana wherein the drought management committee members presented their CAPs in the local steering group meeting. But still, there is no systematic way of accommodating and providing budget for the plans. Most of the plans are just put on the shelf.

Since decentralisation is gradually put in place, the development planning process has been discussed and began to be practised in Marsabit and Turkana counties.

### **Current situation of development planning in Marsabit County**

The five-year CIDP of Marsabit County was prepared in 2014, according to the ward administrator in Marsabit. The CIDP was prepared based on the bottom-up approach of planning to reflect the needs of the community. In Marsabit, planning meetings were conducted at the ward level in March 2014. A development plan was prepared in each ward by a few representatives of the villages through the mobilisation and facilitation of the ward administrator. These community development plans prepared at the ward level were reported to a sub-county administrator and then to



## *Part III*

### *Lessons for Better Community-based Drought Management*

the Ministry of Finance and Economic Planning to be compiled as CIDP. Finally, the county government budget is allocated to each technical ministry and the CIDP is implemented. Every March, there is a meeting at the ward level where the ward administrator and the community members discuss their needs (there is a chance to review their existing CAPs prepared through the past CMDRR approaches at this time).

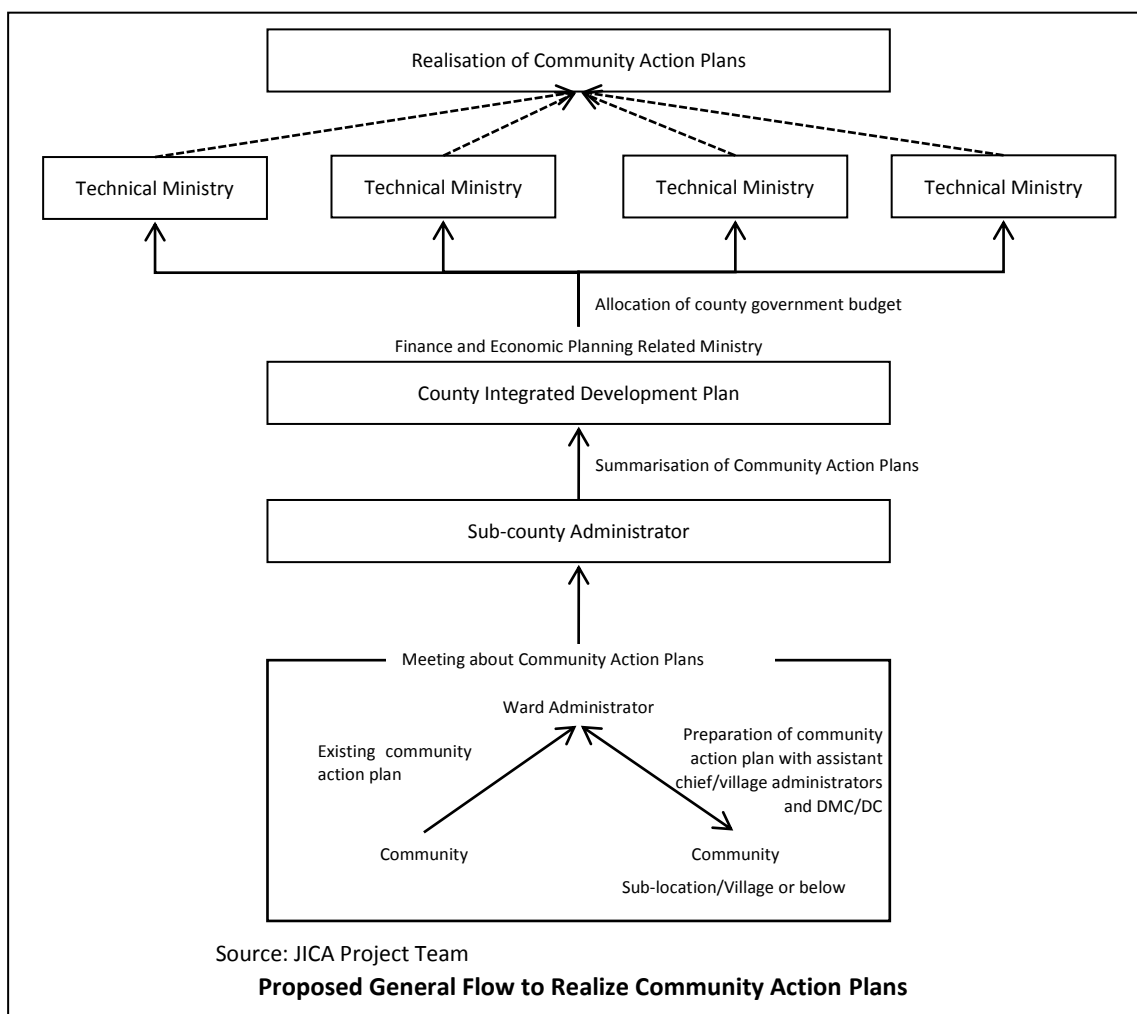
#### **Current situation of development planning in Turkana County**

In case of Turkana County, the Department of Disaster Management was established under the Ministry of Public Service, Development Administration and Disaster Management. The main role of the Department of Disaster Management is coordination of disaster-related activities carried out by all the stakeholders including external agencies. For planning, the Ministry of Finance and Economic Planning and Public Service and the Ministry of Public Service, Development Administration and Disaster Management are in charge of the preparation of CIDP. The CIDP is prepared through community consultation as in Marsabit County. Ward administrators together with location chiefs (since there are no village administrators as of now) mobilise the community to organise planning meetings where officers from the Department of Disaster Management support the preparation of community development plans in the meetings. The meetings are supposed to be conducted at the administrative unit of village that will be demarcated in the coming days. The process after obtaining the community development plans in the meetings is the same as that for Marsabit County.

#### **Proposed flow of realisation of Community Action Plan embedded in the County development process**

In both county planning processes, the CAPs can be used as an input when the planning meetings are to be held at the community level. The CMDRR approach should be officially accommodated into the county development planning, especially the process after CAPs are formulated. The proposed general organisational flow to realise CAPs referring to Marsabit and Turkana counties is shown below.

*Part III*  
*Lessons for Better Community-based Drought Management*



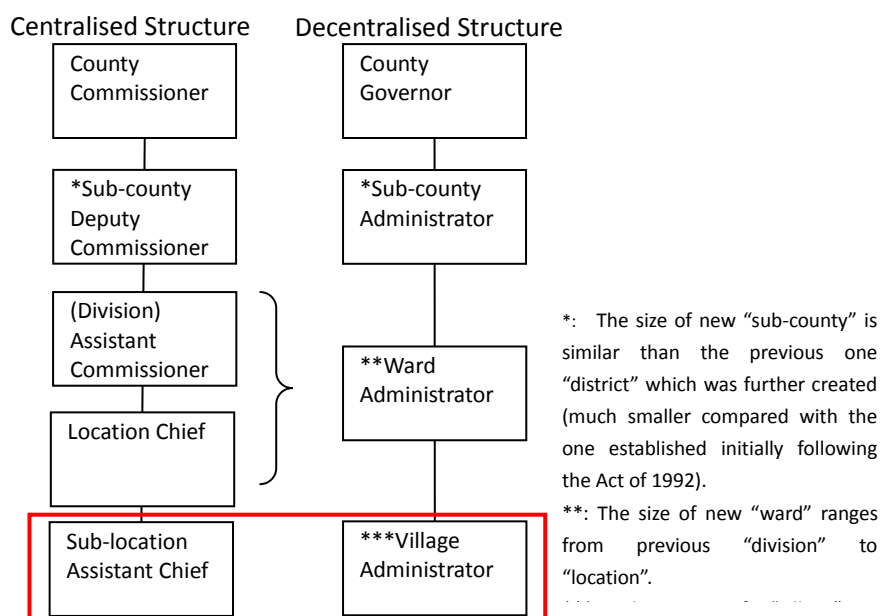
For areas where CAP has not yet been prepared, new donor agencies can assist to prepare CAP either through the CMDRR approach. Even without assistance from donor agencies, the formulation of CAP is recommended to be done under the initiative of the local government staff (chief or administrators, more specifically assistant chief and village administrators). As such, the CMDRR process is proposed to be formalised and institutionalised into the current county government planning process, and should be considered as one of the participatory development planning processes for formulating CIDP, which also supposed to be updated annually. In addition, it is recommended that the process of “Meeting about Community Action Plans” is done during the first three months in a calendar year (Jan.~Mar.) in order to fit into the budget preparation process of county governments (for instance this process was done in March 2014 in Marsabit).

## 18. Careful monitoring of the progress of decentralised structure, and its practical accommodation at the community level

Summary:

- At the community level, new structure under county government is gradually being established, and decision making and governance systems are being changed from the central government system. This change should be accommodated in developing drought resilience.

At the community level, the centralised structure, i.e., chief and assistant chief, are still recognised as the administrative officers by the community people. Ward and village administrators have not been fully recognised for their functions. For drought management at the community level, it is important to observe the progress and extent of the transfer of the current function of chiefs to administrators, and accommodate such shift into the community-based drought management system discussed in this part.



Source: JICA Project Team  
**Centralised and Decentralised Administrative Structures**

*Part III*  
*Lessons for Better Community-based*  
*Drought Management*

As discussed, DMC shall be positioned under either chief or administrator (specifically sub-location and village) whoever will play the central role of development on the ground. Further, the chief and administrator should be proactive in developing their area. Likewise, strong initiative by the government is required to capacitate the community and enhance resilience through development. It must be understood, however, that building capacity and resilience is a long process.

# Part IV

## Lessons in Each Technical Area

This part describes lessons learnt in the implementation of the sub projects for three technical areas of ECoRAD, namely Sustainable Natural Resource Management, Livestock Value Chain Improvement, and Livelihood Diversification, in addition to lessons derived from activities for Capacity Development of Government Officers.

For Sustainable Natural Resource Management, lessons are for the two sub categories of engineering, and community-based management.

There are five, eight, and one outcomes in Livestock Value Chain Improvement, Livelihood Diversification, and Capacity Development of Government Officers respectively.



## 19. Strategic provision of water points is an important key

### Summary:

- Most of the livestock are adversely affected by non-availability of grazing places in times of drought or dry spell, (shortage of migratory places).
- The key to improving resilience against drought is how to sufficiently prepare the grazing areas for the livestock during drought (extension of migratory routes).
- To extend the migratory route, the following points should be considered and examined strategically:
  - (1) Seasonal migratory routes;
  - (2) Location of available rangelands which are not fully used in the dry season;
  - (3) Geographical limitation of the migratory routes.

### **Ideal migrating condition in drought year**

As explained in Part II, livestock are adversely affected in times of drought only if they have no place to graze.

As shown in the figure below, if the herds had enough span on the chains of the dry season grazing areas, they would not have experienced any hardships or loss in times of drought.



Source: JICA Project Team

**Image of Ideal Migrating Condition in Drought Year**

The establishment of dry season grazing area is key in drought resilience in terms of natural resource management.

**Factors to be considered in establishment of water points strategically**

**(1) Seasonal migratory routes**

- It is difficult to trace the actual livestock migratory routes because such routes vary every year depending on the rainfall distribution and growth of forage in rangelands. However, the major patterns and directions of livestock movement can be captured.
- It is noted that such migratory routes differ within different ethnic groups. The migratory routes should be simplified by considering the ethnic groups involved.
- If a water point is established as a relay point between one rangeland to the other it is not necessary to consider the pasture around the water pan. However, if the purpose is to provide a new dry season grazing area with both water and pasture, then the rangeland potential and available pasture should be examined as mentioned in the following section.

**(2) Location of available rangelands with pasture in the dry season**

The available rangeland should be examined and its potential evaluated in terms of the following: type of vegetation, amount of grass, expectation of stable rainfall in the wet season, and so on.

One important consideration is a rangeland located in the mountainous area that is not yet fully utilized due to scarcity of a water source.

Another consideration is a rich rangeland even in the dry season, near a settlement area, that has been utilized as a wet season grazing area.

**(3) Geographical limitation of migratory routes**

Each ethnic group has a limitation of its migratory routes in the context of relations with other ethnic groups. Such conditions may differ by tribe. For example, the Rendille never intrude into the Gabra land to avoid conflicts. However, the Rendille can move their herds into the Samburu land easily, particularly during a drought spell since they have established good relations with each other.

It should be noted that, despite good relations the acceptance of intrusion by other ethnic groups may change depending on the severity of the drought.

The precise methods of selection for water facilities will be described in the following sections.



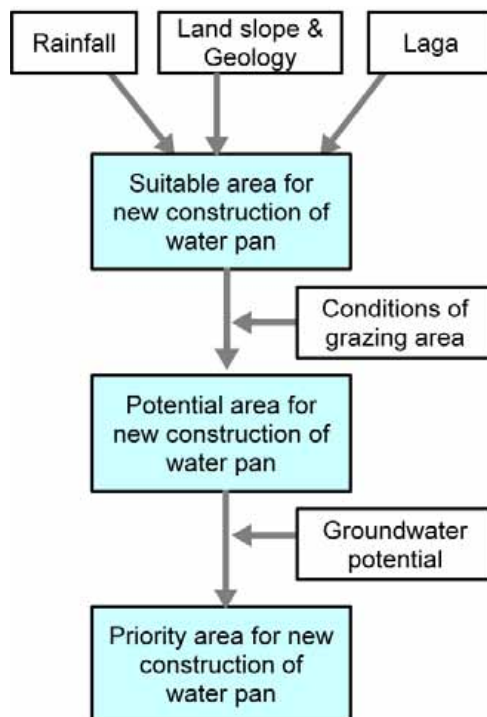
## 20. How to make “A potential map for water pan development”?

### Summary:

- To select a suitable area for a water pan, the following basic conditions are considered:
  - 1) Rainfall
  - 2) Land slope
  - 3) Geological map
  - 4) Availability of *Lagas* (seasonal rivers)
  - 5) Seasonal grazing areas
- For each factor above, the suitable condition for water pan should be defined based on both theoretical and empirical considerations.
- Overlap these factors and identify the most suitable areas for the facilities.

### Procedure for evaluation of potential

In this guideline, a sample of a study in Turkana will be explained. However, the readers should adjust this method based on their own site's situation. In particular, each threshold in the guideline was set based on the situation in Turkana.

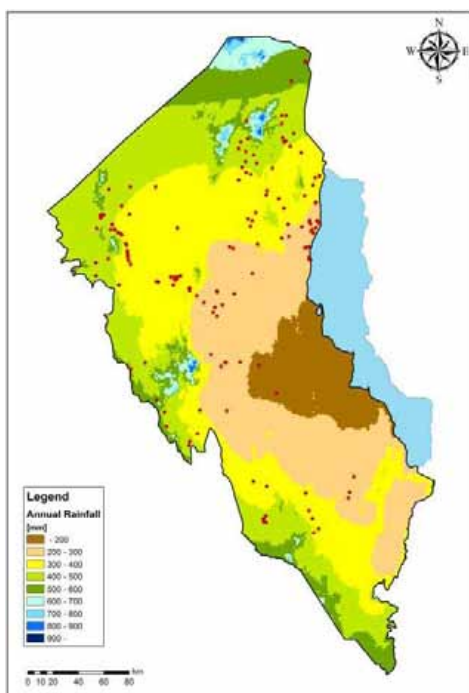


Source: JICA Project Team

Work Flow of Prioritization of Water Pans

- The suitable area for water pan construction is evaluated in terms of these fundamental conditions: 1) rainfall, 2) land slope, 3) geological map, and 4) *Lagas* (temporary river)
- The potential area is evaluated taking into consideration the conditions of the grazing area.
- The potential area is selected in the grazing areas where pasture is rich especially during the dry season.
- The priority area for the construction of a new water pan is evaluated with reference to the potential of groundwater development with the installation of hand pump.
- If the area has a high potential both for water pan and groundwater development, the priority is given to groundwater because of perennial availability and less construction cost.

**Suitable areas for water pan construction in terms of annual rainfall**

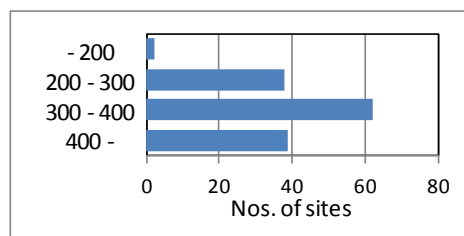


Source: JICA Project Team  
**Rainfall Distribution and Locations of Existing Water Pans**

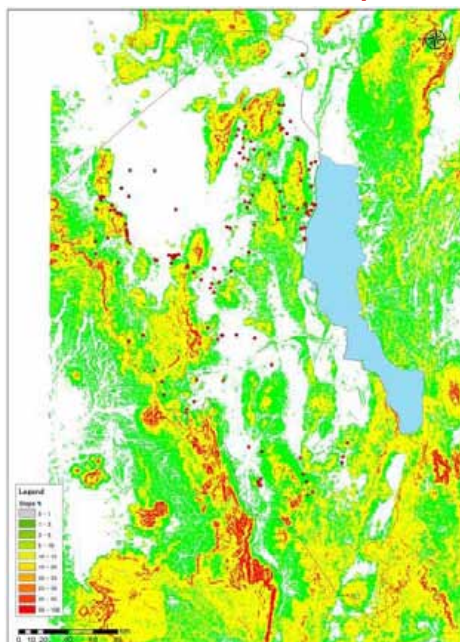
- The existing water pans are mostly concentrated in the area of which annual rainfall is estimated at more than 200 mm/year.
- Around 99% of the existing water pans are located in these areas.

**Distribution of Existing Water Pans in terms of Annual Rainfall**

|                       |                |
|-----------------------|----------------|
| less than 200 mm/year | 2 sites ( 1%)  |
| 200 - 300 mm/year     | 38 sites (27%) |
| 300 - 400 mm/year     | 62 sites (44%) |
| more than 400 mm/year | 39 sites (28%) |



**Suitable area for water pan construction in terms of land slope**

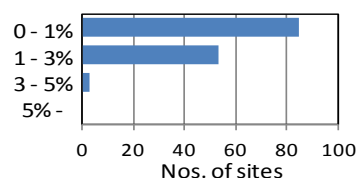


Source: JICA Project Team  
**Slope Conditions and Locations of Existing Water Pans**

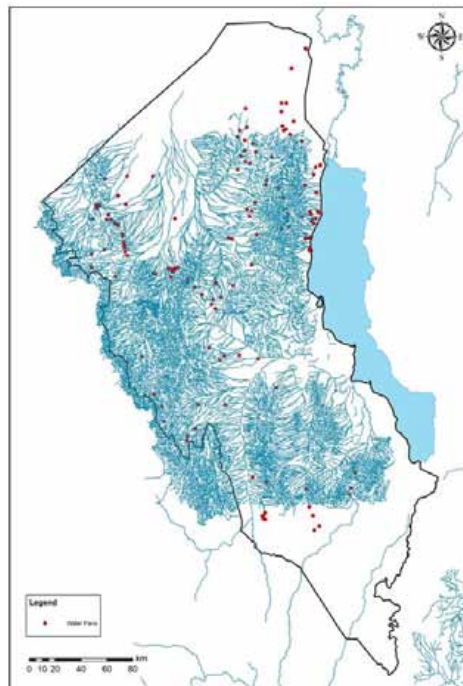
- Existing water pans are mostly concentrated in the area of which the land slope is less than 3%.
- Around 98% of the existing water pans are located in these areas.

**Distribution of Existing Water Pans in terms of Land Slope**

|              |                |
|--------------|----------------|
| 0 - 1%       | 85 sites (60%) |
| 1 - 3%       | 53 sites (38%) |
| 3 - 5%       | 3 sites ( 2%)  |
| more than 5% | 0 site ( 0%)   |



### Existing water pans and laggas

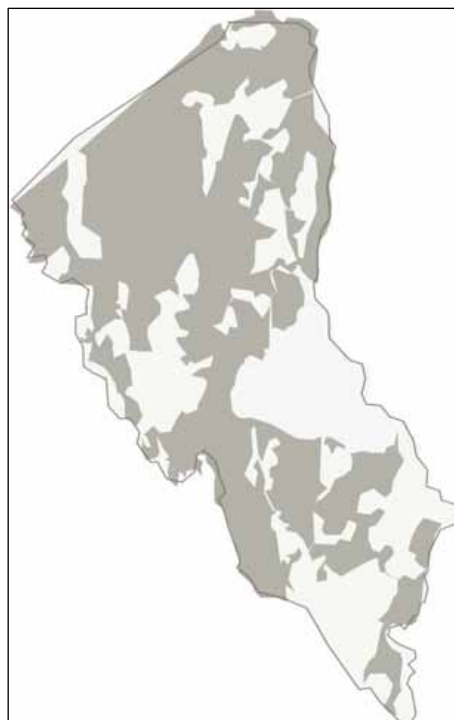


- The existing water pans are located along the small seasonal rivers (Laggas), mostly within 100 m from the Laggas.
- All Laggas, including the seasonal streams with small catchment area can be considered as water sources for the water pan.
- Meanwhile, the major rivers, such as the main stem of the Turkwel, Tarach, Kerio rivers and so on are not suitable rivers as water sources especially for the water pan.
- There is no available detailed information of Laggas in the northern and southeastern areas.

Source: JICA Project Team

**Laggas and Existing Water Pans**

### Suitable area for water pan construction in terms of annual rainfall, land slope, geology, and laggas

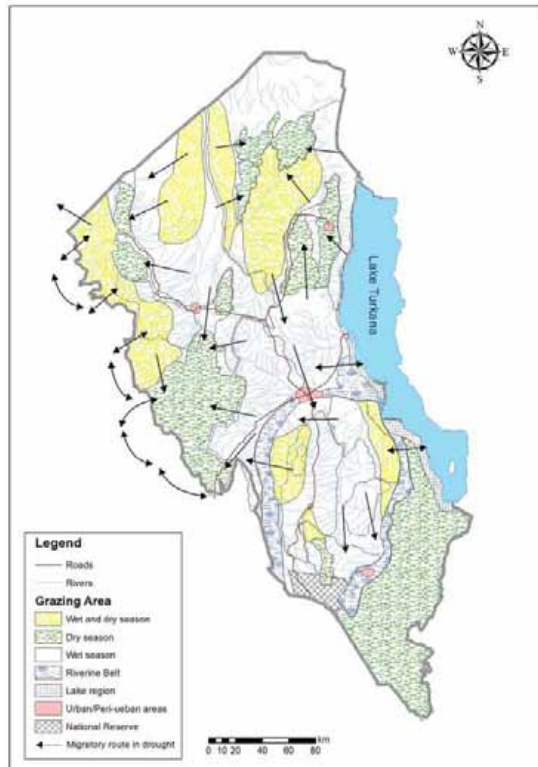


- The figure shows the suitable areas for water pan construction that satisfies all of the above conditions, rainfall, land slope, geology, and *Laggas* (seasonal river).
- The suitable areas are spread in most of the sub-counties, but Turkana Central Sub-county has a limited suitable area, due to its low rainfall.
- In the other sub-counties, there are many suitable areas in low flat lands.

Source: JICA Project Team

**Suitable Areas for Water Pans in terms of Rain, slope, and laggas**

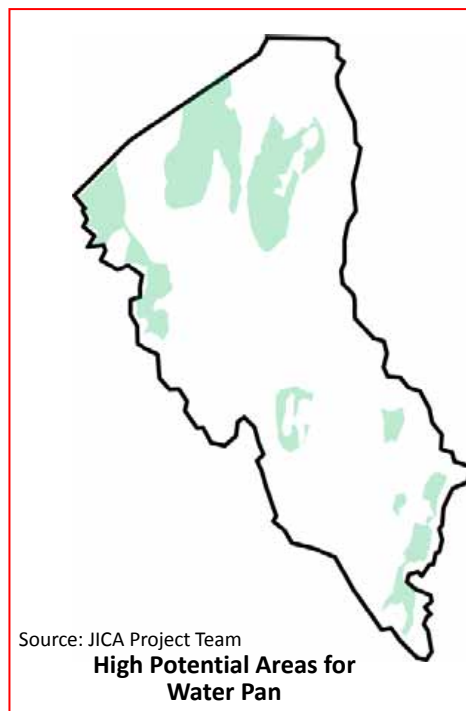
**Grazing area in which rich pasture is available during dry season**



Source: JICA Project Team  
**Grazing Areas for Dry Season**

- The figure shows the grazing area and migratory routes.
- The grazing area is divided into three categories which are:
  - 1) Dry season grazing areas  
These areas are currently utilized during the dry season. Both water and pasture are available.
  - 2) Wet/dry season grazing areas  
These areas are only utilized during the wet season. During the dry season, water is not available, whereas, pasture is available. When a water source will be developed, then the area can be used during the dry season.
  - 3) Wet season grazing areas  
These areas are only utilized during wet season. During the dry season, water and pasture are not available.

**High potential area for construction of water pan**



Source: JICA Project Team  
**High Potential Areas for Water Pan**

- The suitable area for the water pan construction should be in good grazing areas during the dry season.
- The figure shows such suitable areas, which satisfies the above conditions for the wet/dry grazing areas.
- The areas with high development potential are located in Turkana's northern and western sub-counties, and also scattered in other sub-counties.

**Available data and information (Turkana and entire Kenya)**

- Annual isohyetal map using the data obtained from the WorldClim - Global Climate Data Version 1.4.
- Land slope map based on the Shuttle Radar Topography Mission (SRTM) data.
- Geological map of Kenya (Ministry of Energy and Regional Development of Kenya, 1987)
- Laggas' map referred in Turkana to United Nations Educational, Scientific and Cultural Organization's Geographic Information System (UNESCO's GIS) data
- Location maps of existing water pans in Turkana referred to Management Information Systems (MISs) by United Nations International Children's Emergency Fund (UNICEF) in 2006 and by Ministry of Water and Irrigation and Oxfam in 2009.
- Wet and dry grazing areas in Turkana based on the UNICEF's MIS, reviewed and modified by the project through field survey and interview to the pastoralists.



## 21. Water pan, borehole, or other facilities for water points?

Summary:

- In Northern Kenya, there are several water facilities providing water in the dry season and during drought such as: (1) water pans, (2) hand pump operated borehole, (3) mechanical- pump operated boreholes and (4) rock catchment.
- Each of these facilities has its advantages and disadvantages and the planner should understand such characteristics adequately.

### Comparative assessment of each water facility type and recommendations based on situations.

The best sites of constructing water pans are as follows:

**Advantage and Disadvantage of Water Facilities**

| <b>Water Pan</b>   |  |
|--|--|
| <b>Advantages</b>  | <b>Disadvantages</b>   |
| <p>- The water pan can provide a large volume of water. In Northern Kenya, the storage volume of water pans ranges from 10,000 to 30,000 m<sup>3</sup></p> <p>- Once the construction is completed, there will be no operational expense required for holding the water. <i>Small tip:</i><br/><i>The appropriate size of water pan in terms of its cost-performance is 15,000-20,000 m<sup>3</sup> according to an evaluation by the project.</i></p> | <p>- The construction cost is relatively higher than the other water facilities.</p> <p>- Sedimentation is the biggest problem for this facility. In the worst case, a pan may lose its effectiveness within several years.</p> <p>- Maintenance expense for de-silting work is too big for the users to manage it by themselves.</p> <p>- Due to scarcity of rainfall and river flow data, pan sites are often selected based on a non-scientific data and information which might lead to wrong decision.</p> <p>- It holds water only for a couple of months due to the high evaporation rate in Northern Kenya.</p> <p>- It is not easy to control the number of users and/or exclude unfavorable users.</p> |
| <p><u>Recommended sites for water pans:</u></p> <p>-Locate them where there can be a sufficient and stable river flow in Lagas in the wet season.</p> <p>- Locate them where there is a large volume of water required.</p> <p>- Locate them where there are no other options applicable.</p>  |  |

*Part IV*  
*Lessons in Each Technical Area*

| <b><u>Hand –pump operated Borehole</u></b>  |   |
|---|---|
| <b>Advantages</b>   | <b>Disadvantages</b>  |
| <ul style="list-style-type: none"> <li>- Stable water supply is expected.</li> <li>- The operation &amp; maintenance cost is low and users can manage by themselves.</li> <li>- Hand pump system uses quite a simple system which the local technicians can manage.</li> <li>- It is easy to control the number of users and exclude unfavorable users.</li> <li>- Its water quality is much better than the water pan.</li> </ul>          | <ul style="list-style-type: none"> <li>- There is an inevitable possibility of failure like for a dry borehole.</li> <li>- It cannot pump up from a deep aquifer. For a normal hand-pump, like an Afridev pump, around 50 m is its maximum depth while a special deep pump can do up to 90 m maximum depth.</li> <li>- The volume which it can provide is quite small. Normally, a hand-pump yields from around 0.5 to 2 cu.m/hour. This translates to only around 360 cu.m per month.</li> </ul> |
| <p><u>Recommended sites for hand- pump operated boreholes:</u></p> <ul style="list-style-type: none"> <li>- Locate where there is a small demand for water.</li> <li>- Locate where the groundwater potential is high.</li> </ul>   |   |
| <b><u>Mechanical-Pump Borehole</u></b>  |   |
| <b>Advantages</b>   | <b>Disadvantages</b>  |
| <ul style="list-style-type: none"> <li>- A stable water supply is expected.</li> <li>- The volume that it can provide is much bigger than the hand-pump.</li> <li>- It is easy to control the number of users and exclude unfavorable users.</li> <li>- Its water quality is much better than the water pan's.</li> </ul>   | <ul style="list-style-type: none"> <li>- There is as inevitable possibility of failure, like for a dry borehole.</li> <li>- Its daily operational costs are high and the repair expenses during a breakdown may not be met by some users.</li> <li>- Regular maintenance works are required for its proper operation.</li> <li>- There is a possibility to have saline water in some areas, like in Turkana County.</li> </ul>  |
| <p><u>Recommended sites for mechanical pump boreholes:</u></p> <ul style="list-style-type: none"> <li>- Locate where the water demand is comparatively higher than that which a hand-pump borehole can meet.</li> <li>- Locate in an area with a high the groundwater potential.</li> <li>- Locate in an area where fuel, spare parts and other required services are easily accessible. It is not recommended for remote areas.</li> </ul> |   |
| <b><u>Rock Catchment</u></b>  |   |
| <b>Advantages</b>   | <b>Disadvantages</b>  |
| <ul style="list-style-type: none"> <li>- Its water quality is much better than the water pans.</li> <li>- There is no contamination of water with livestock feces.</li> <li>- There is an easy control for the number of users.</li> </ul>  | <ul style="list-style-type: none"> <li>- In comparison with water pans, its catchment area is quite small at around 100 to 200 m<sup>2</sup>.</li> <li>- Its storage volume is small, which is approximately 50 to 100 m<sup>3</sup></li> <li>- Its construction cost is relatively high in consideration of its cost per storage volume.</li> </ul>  |
| <p><u>Recommended sites for rock catchments:</u></p> <ul style="list-style-type: none"> <li>-Locate where clean water is required, and the volume of usage is not so high.</li> <li>- Locate where rainfall is highly expected at its exact location.</li> </ul>  |   |

Source: JICA Project Team

## *Part IV*

### *Lessons in Each Technical Area*

#### Community opinion: Actual experience in Marsabit and Turkana about the provision of water points

In Marsabit County, the project team proposed a plan to construct a water pan in a rich rangeland to the community. However, this community rejected the proposal because they were afraid that a large number of livestock might come from other communities and that their rangeland would be degraded. They accepted the need for a borehole in the area but they did not want to have it as an operational facility due to the need to exclude unfavorable users from their water point.

In Turkana County, an elder tried to refuse the proposal of borehole construction due to the same reason. In this case however, other community members persuaded him and he accepted the proposal.

At the planning stage, it is important to first examine and evaluate the option before finally consulting the community for the final decision.





## 22. Where should the water facilities be built?

In the wet season grazing areas or dry ones?

### Summary:

- Dry season grazing areas have water sources as well as rich pastures. This is the reason why livestock herds migrate to dry season grazing areas. Water pans are not required at such places, where water sources have been equipped.
- Wet season grazing areas do not have water sources in the dry season. However, there are a lot of areas where pastures are available even in the dry season. If water sources are developed in any of these areas then it can be turned into a good dry season grazing area.

### **Suitable site for constructing water pans**

The best sites for constructing water pans are whenever:

- (1) There are rich pastures consumable in the dry season.
- (2) There is currently no other water source during the dry season.
- (3) There is enough volume of river runoff expected in *lagas* which form the pan's catchment.
- (4) There is a high demand for the water facility by the neighboring community. This should be finally confirmed through a community consultations meeting.

The following table shows the status of development potential for the pans in terms of availability of water and pasture.

## Part IV Lessons in Each Technical Area

**Seasonal Grazing Areas and Pasture/Water Availability**

|     | Areas         | Wet Season |            | Dry Season |            | Which season grazing area?     | Development Potential |
|-----|---------------|------------|------------|------------|------------|--------------------------------|-----------------------|
|     |               | Pasture    | Water      | Pasture    | Water      |                                |                       |
| 1   | Mountain area | Yes        | Yes        | <u>Yes</u> | <u>Yes</u> | <u>Dry</u> season grazing area | No need to develop    |
| → 2 | Mountain area | Yes        | Yes        | <u>Yes</u> | No         | <u>Wet</u> season grazing area | <u>High potential</u> |
| 3   | Lowland area  | <u>Yes</u> | <u>Yes</u> | No         | No         | <u>Wet</u> season grazing area | Low potential         |
| → 4 | Lowland area  | <u>Yes</u> | <u>Yes</u> | Yes        | No         | <u>Wet</u> season grazing area | <u>High potential</u> |
| 5   | Lowland area  | Yes        | Yes        | <u>Yes</u> | <u>Yes</u> | <u>Dry</u> season grazing area | No need to develop    |

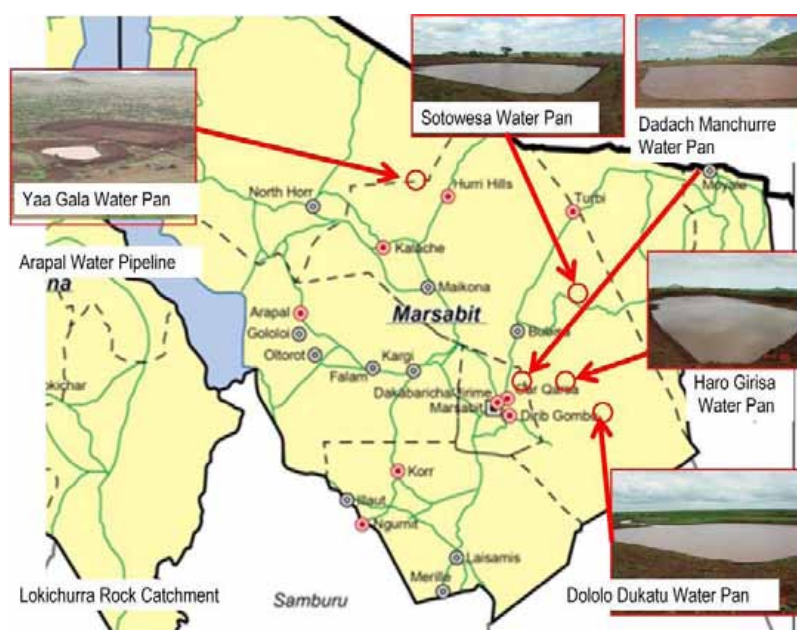
Source: JICA Project Team

From the table above, areas classified in No. 2 and No. 4 have a high potential for water pans.

This means that one of the effective ways of supporting the pastoralists' mobility is to construct pans in the wet season grazing area while the pastures are available.

### Water pans constructed by ECoRAD in Marsabit County are located in the wet season grazing areas.

The following figure shows the locations of water pans, which were constructed by the ECoRAD project. As illustrated in the figure, most of the pans were constructed in the wet season grazing area, like the one that is near Marsabit town or major settlement.



Source: JICA Project Team

**Water Pans Constructed by ECoRAD Project**

**Effectiveness of the water pans by ECoRAD project.**

According to site observations in the Dololo Dokatu Water Pan in Girib Gombo community, around 12,540 heads of livestock (approximately 12,000 shoats, 40 camels, and 500 cattle) had stayed and grazed around the Dololo's pan for two months from January to February in 2014.

As a consequence of this, grass was conserved in the mountain areas and could have been consumed by livestock, if drought had occurred. Drought resilience has therefore been improved for at least 12,540 heads of livestock for two months by the new pan.

**Reference: Is this the Dry Season Grazing Areas or Wet Season Grazing Areas?**

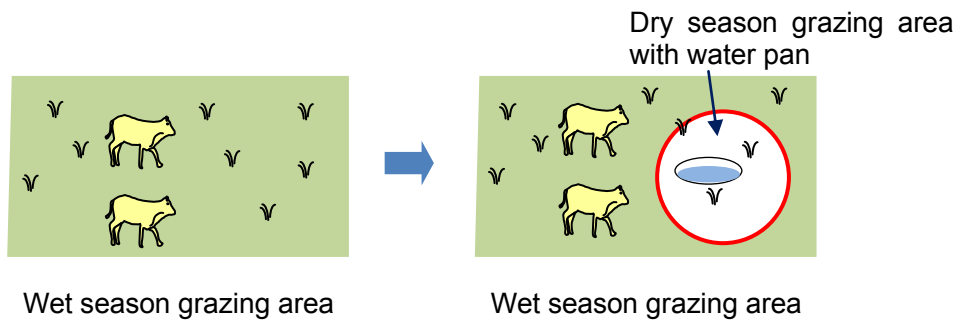
The basic essential action of community rangeland management is conservation of dry season grazing area during wet season by the community. To plan and designate conservation area and period, proper recognition and definition of dry / wet season grazing area is very important.

It seems, however, that there is some confusion on how to identify a rangeland as a dry season grazing area. Some might designate a rangeland that is in a mountain as a dry season grazing area. This is because livestock used to migrate to such mountain area in the dry season even if such dry season grazing area includes some rangelands where livestock cannot graze in the dry season due to scarcity of water.

On the other hand, others refer to a rangeland near the settlements as a wet season grazing area because livestock always stay near the settlements in the wet season. It is partially correct, but not fully correct.

Thus, nowadays, such way of thinking (i.e., it is near a mountain or settlement area) may lead to misunderstanding and confusion. Because of the development of technology at present, several boreholes and water pans were constructed at the mountain area and near the settlement area. Consequently, those facilities produce new dry season grazing areas scattered in all over the counties.

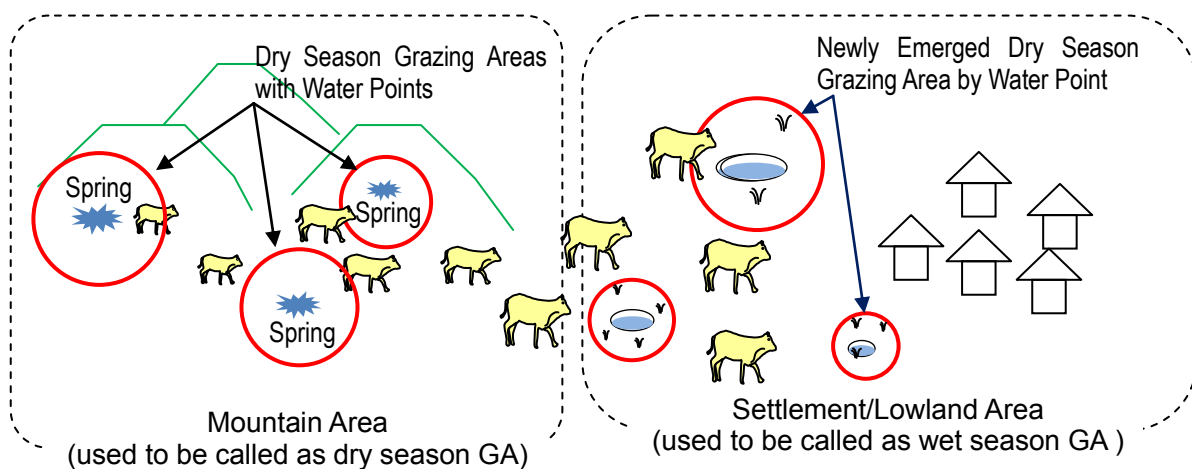
*Part IV*  
*Lessons in Each Technical Area*



Source: JICA Project Team

**New Emerged Dry Season Grazing Area with Water Pan**

For example, based from the figure above, if a water pan is constructed near a settlement area, an area around it approximately 10 km in radius, will be converted from a wet season to a dry season grazing area. It means that the emerged dry season grazing area is produced due to the new construction of water pan near the settlement areas. In particular in settlement areas, most of the rangelands are used as wet season grazing areas. But, recently several of the new dry seasons grazing areas have emerged due to construction of a water pan. With this, it cannot be called as a uniform wet season grazing area.



Source: JICA Project Team

**Wet Season Grazing Area and New Emerged Dry Season Grazing Area**



## 23. Recommended water structure: JICA-type Rock Catchment

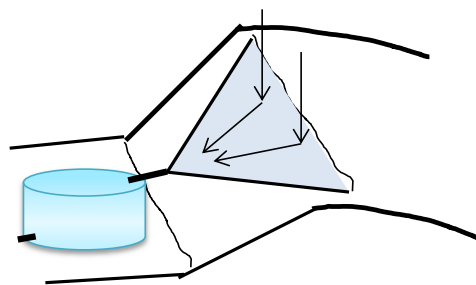
### Summary:

- Advantages:
  - The construction cost is 30% less than that of a standard design.
  - It has an easy design and construction for big capacity (750 m<sup>3</sup> or more) of reservoir (normal design is from 50 to 100 m<sup>3</sup> only).
  - Rain water can be collected effectively.
- Disadvantage:
  - Leakage from the bottom walls and rock surfaces might occur. However, this leakage can be stopped with an impervious coating.

### **Outline of the new Rock Catchment**

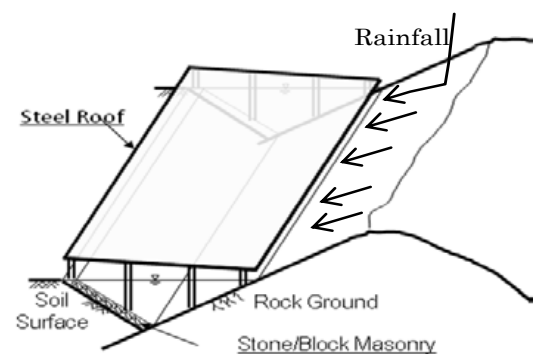
In the ECoRAD project, a new design of rock catchment facility (hereinafter called as the “JICA-type Rock Catchment”) was introduced.

In this type, an underground excavated reservoir was constructed instead of a tank on ground level with the objective of increasing the storage capacity and minimizing construction cost as shown in the figure below.



An ordinary design of a rock catchment

Source: JICA Project Team



JICA's design

### **Schematic Images of New Rock Catchment Structure**

#### Technical Recommendation

The ECoRAD project designed and constructed a sidewall with wet stone masonry and impervious painting coating. However, it is strongly recommended, subject to budget availability, to use a concrete side wall and apply impervious paint-coating on the rock surface to minimize leakage from the reservoir.



JICA-type Rock Catchment

**Salient Features of Lokuchura Rock Catchment in ECoRAD Project**

|                                    |   |
|------------------------------------|---|
| Catchment area of rock catchment   | 9,500 m <sup>2</sup>  |
| Dimension of underground reservoir | Length of 130 m<br>Width (water surface) of 6.5 m on average<br>Effective water depth of 1.8 m on average |
| Capacity of underground reservoir  | 750 m <sup>3</sup>  |
| Related facilities                 | - Iron roof with support<br>- Two hand pumps  |
| Estimated beneficiaries            | - 25,000 HH-day/rainy season<br>= 120 HH(15 L/HH/day) for 200 days  |

Source: JICA Project Team



*Impervious paint-coating on the bottom and side walls in Lokchura Rock Catchment*

## 24. Solar power is one of the recommended resources in Northern Kenya

### Summary:

- The utilization of solar power is one of the effective and recommendable resources in Northern Kenya, in consideration of: (i) economical aspect in the overall project life period, (ii) ecological aspect, and (iii) operation and maintenance aspect.
- In the economical aspect, it was confirmed that the overall expense of a solar pump system was approximately 74% less than that of a diesel pump system based on existing projects.
- The initial cost for solar powered facilities is approximately 4 times as large as that of a diesel operated one. This disparity is however reducing annually.
- It should however be noted that solar power system has limitations in its application for effective use in Northern Kenya.

### **Best climate for solar system application**

The Northern Kenya region, with sunny days dominant throughout the year, and strong sunlight radiation is a suitable place for utilization of solar power systems.

Furthermore, the recurrent drought that poses the biggest risk to life in the region is an ideal condition for operating solar power systems. It means that this system is quite unique as it can harness useful power from the drought situation for use by residents.

### **Economical feasibility of solar system application**

The following table shows a comparison of both capital and recurrent costs for a diesel-run generator power system and that of a solar power system.

This is for Shurr community borehole water supply (Marsabit) where Ecorad installed a new solar power system to an existing borehole previously run by a diesel generator.

As shown in the table, the overall cost of the diesel generator system is 3.8 times that of the solar powered system.

**Economic Comparison of the Two Systems**

|          |                                   |            | Genset<br>25kW    | Solar<br>11.2kW  | Genset/<br>Solar |
|----------|-----------------------------------|------------|-------------------|------------------|------------------|
| 1        | Procurement Cost                  | Ksh        | 800,000           | 3,383,114        | <b>0.24</b>      |
| 2a       | Fuel consumption in dry season    | Ksh/season | 691,200           | 0                |                  |
| 2b       | Fuel consumption in wet season    | Ksh/season | 153,600           | 0                |                  |
| 3        | Maintainance cost                 | Ksh/year   | 72,000            | 36,000           |                  |
| 4        | Life time                         | year       | 20                | 20               |                  |
| 5        | Total operation cost for lifetime |            | 18,336,000        | 720,000          | <b>25.5</b>      |
| 6        | Replacement cost                  | Ksh/10year | 800,000           | 1,107,367        |                  |
| <b>7</b> | <b>Total cost (1+5+6)</b>         |            | <b>19,936,000</b> | <b>5,210,481</b> | <b>3.8</b>       |

Note: Both cases of the calculations do not include the initial cost and Operations and Maintenance (O&M) cost for the submersible pump.

Source: JICA Project Team

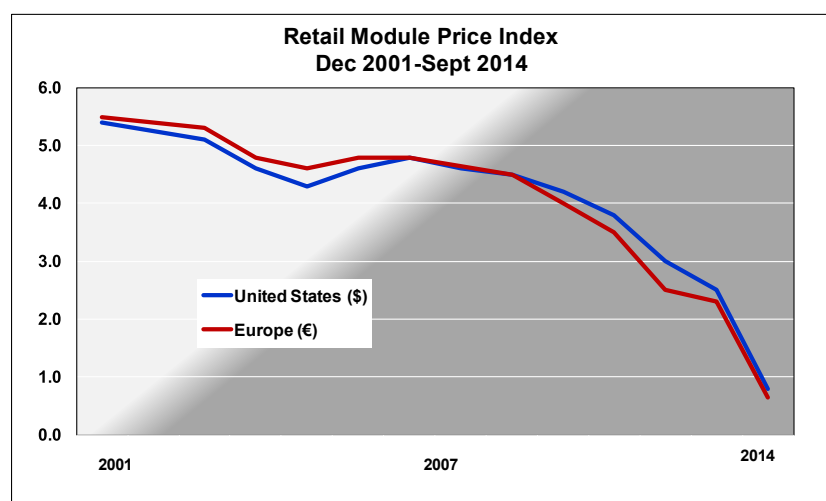
This is just a case study and may be replicated elsewhere in the region where such solar systems have been installed to replace diesel based generators for boreholes operations.

The difference in costs is bound to increase with the continued reduction of the capital cost for solar power systems as shown below.

**Present tendency: price down of solar system application**

According to available data, the price of solar power modules from 2001 to 2014 dropped drastically in the United States and Europe.

Over this period the prices of solar modules decreased by about 85% and a similar trend has also been observed in Kenya.



Source: Davis & Shirtliff

**Price Tendency of Solar Power Module**

If, as expected, the prices continue reducing in Kenya, the solar power system will become affordable in terms of the initial investment and be accepted as



the best power source in Northern Kenya.

For reference, it is noted that the cost of oil products in Kenya has risen by more than 50% from 2004 to 2014.

**Box. Experience in ECoRAD (solar power systems as income sources)**

If appropriately designed as an income generating source, a solar power system can support a community or other stakeholders financially through a continuous generation of revenue.

**(1) The solar system in communal borehole.**

A solar power system installed in a community in Marsabit generates a community development fund. Using this fund, the community built a classroom which costs around Ksh400,000, and paid the salaries of the teachers.

For details, please refer to the Box “Community Development Fund in Marsabit Assisted by ECoRAD”, pages 3 to 24 in Part III.

**(2) The solar system in semi-private water-service company in Lodwar**

In Turkana, the project installed three sets of the solar power system in boreholes operated by Lodwar Water and Sanitation Company (LOWASCO). As a result of this LOWASCO’s electricity bills decreased and made savings in the operational costs.

Based on an agreement between LOWASCO and the county government, assisted by the project, part of the savings from the solar system was transferred and used in repairs and maintenance activities of other boreholes in the county.

For instance, during the period of November 2014 to April 2015, an amount of kSh450, 000 was paid by LOWASCO to the Diocese of Lodwar who have a boreholes maintenance contract with the county government. Such financial support from LOWASCO to the county government for boreholes repairs is expected to be continued for the next 15 to 20 years.



Photos: Solar Power Pumping System in Turkana

(2) *A/C Inverter: Solar system generates D/C*

The solar power modules generate direct current (D/C), not the alternative current (A/C). Since this is a basic but very important point which governs functions of facilities. Thus the planner should examine the purpose of the usage of the power generated by the solar power system because D/C is not suitable for the use of any equipment. For example, the submersible pump used in a borehole is usually not operated by D/C. There are some pumps which can operate with D/C but they have limitations of range in power, yield, and pumping height.

If D/C equipment is not suitable for the facility, a D/C could be installed to a A/C inverter. The cost at the initial stage and replacement phase may increase drastically because this device is so expensive and less durable than modules.

(3) *The system with battery should be carefully planned.*

If the system needs to operate at night time, the battery charging system is required. Since a lifetime of a battery is quite short, such as 2-3 years, it is recommended to avoid installing a battery charging system if any other way can be applicable.

The lifetime of the battery is quite short, maybe two to three years, in comparison with that of modules, with 20 years or more. Consequently, the overall expense of the system increases with such periodic replacement costs of batteries.

The system design should be carefully selected after thorough deliberations and analysis. For example, in a water pumping system, one concept is to store water in an elevated tank instead of the electricity charging a battery during daytime. If the borehole's yield and pump capacity allows for water to be pumped at a higher rate than used at daytime, the excess water can be stored in an elevated tank and used in the night.

## 25. Are there enough water resources in Turkana?

Summary:

- There are still enough water resources in Turkana for human and livestock use. The current water volume utilized from boreholes is **only 12%** of the sustainable yield in the whole of Turkana County.
- The water quality is one of the constraints if effective usage of water is concerned. Not all the water sources in Turkana are suitable for drinking for human and livestock due to salinity and fluoride.
- The water availability and quality are **unevenly distributed** in the county.
- The development of groundwater should be planned after detailed examination of such distribution in advance.

### Available water quantity in Turkana County

It is estimated that 55,000,000 m<sup>3</sup>/year of water can be utilized as a sustainable yield in Turkana County, and only 7,000,000 m<sup>3</sup>/has been used through the boreholes, which is equivalent to only 12.1% of the sustainable yield.

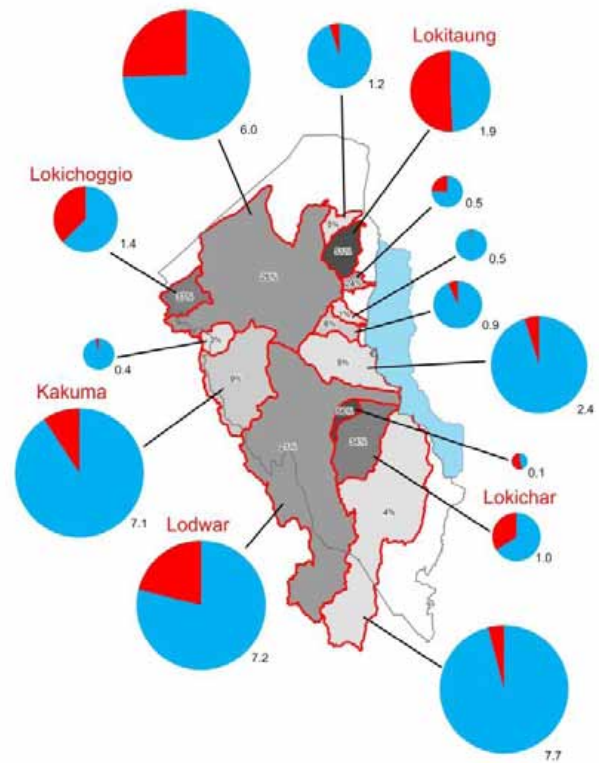
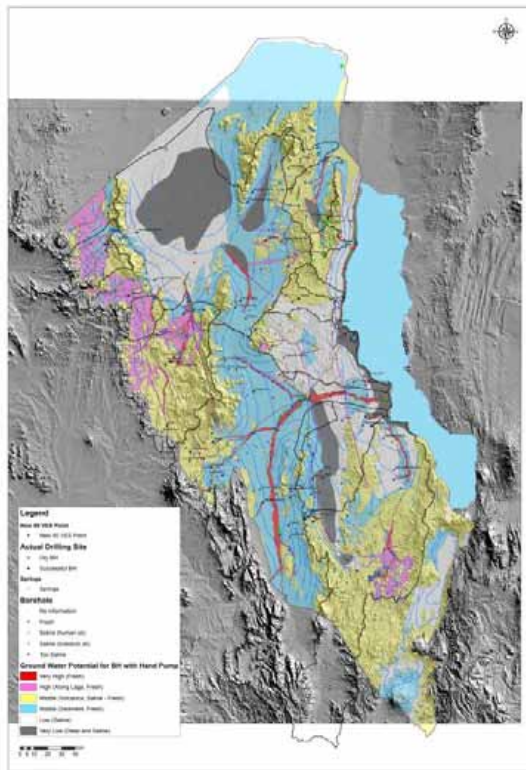
**Groundwater Potential in Turkana**

| Water Budget in Goundwater         | Area 68671km <sup>2</sup> |                   |        |
|------------------------------------|---------------------------|-------------------|--------|
|                                    | mm/yr                     | m <sup>3</sup> /d | MCM/yr |
| (a) Average Rainfall               | 361                       | 67,918,000        | 24,790 |
| (b) Renewable Groundwater Recharge | 8.0                       | 1,497,900         | 547    |
| (c) Sustainable Yield              | 0.8                       | 149,800           | 55     |
| (d) Present Maximum Pumping Rate   | 0.1                       | 18,100            | 7      |
| (b) / (a)                          | 2.2%                      |                   |        |
| (c) / (a)                          | 0.2%                      |                   |        |
| (d) / (c)                          | 12.1%                     |                   |        |

Source: JICA Project Team

### Water potential and its distribution in Turkana County

The left-side figure below is the Turkana Groundwater Development Potential (TGDP) map, formulated in the ECoRAD project through groundwater flow analysis, water balance study, and so on. The map is composed of six-colored zones indicating the groundwater's development potential level from a high potential (Level 5) to low potential (Level 1).



Source: JICA Project Team

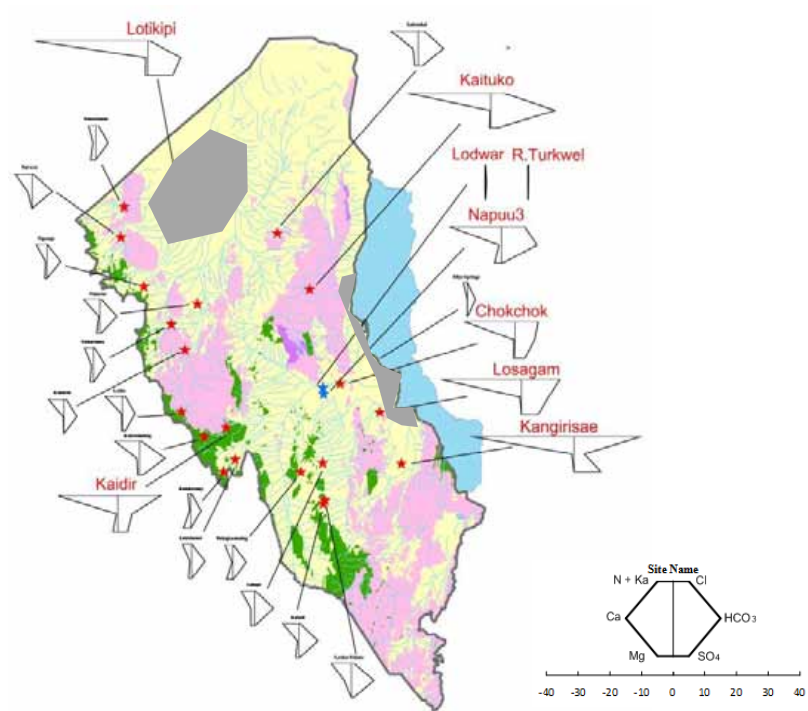
**Turkana Groundwater Development Potential Map and Current Usage Rate**

The figure above at the right-side represents the conditions of water availabilities and percentages of the current usage in volume in each basin. For example, Kakuma basin has 7.1 million cubic meter(MCM) of a sustainable yield and only around 10% is used currently.

**Water quality distribution in Turkana County**

The figure below shows the distribution status of water qualities, which were obtained at the boreholes. The shapes of hexagons represent the water qualities. If the size of the hexagon is big in width, it means that water is contaminated with undesirable substances. According to the water quality survey and groundwater flow analysis, it was found that there are two significant areas, which are marked in gray color in the figure below, where water quality is anticipated to be not preferable for human use. Although the Lotikipi Plan was identified with huge aquifer by several newspapers, it is regretfully indicating that water quality is not preferable.

Part IV  
Lessons in Each Technical Area



Source: JICA Project Team

**Groundwater Quality Map in Turkana County**

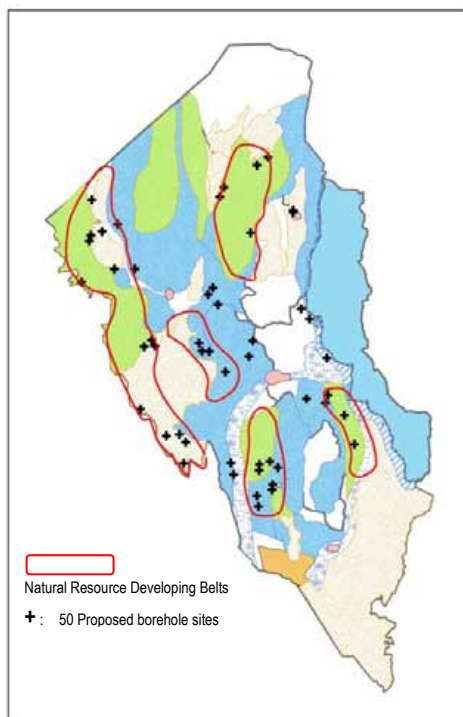


## 26. Where and how to construct boreholes effectively and economically against drought in Turkana?

### Summary:

- The ECoRAD project formulated the Natural Resource Development Belts as focal areas for developing boreholes in order to improve drought resilience for livestock and considering the potential of rangeland and groundwater availability.
- Based on the designated Natural Resource Development Belts, ECoRAD identified 50 potential borehole-sites in Turkana. It is highly recommended to develop those potential sites. The development belts and the 50 proposed borehole-sites are shown in the following figure and attached table.
- When drilling boreholes in Turkana, **do not drill more than 100 m in depth** even if water table is not hit. This is because a deeper aquifer that is more than 100 m may contain saline water or other undesirable contaminated water. Thus, it is strongly recommended to replace the site.

### Natural resource development belts in Turkana County



Source: JICA Project Team  
**Natural Resource Development Belts**

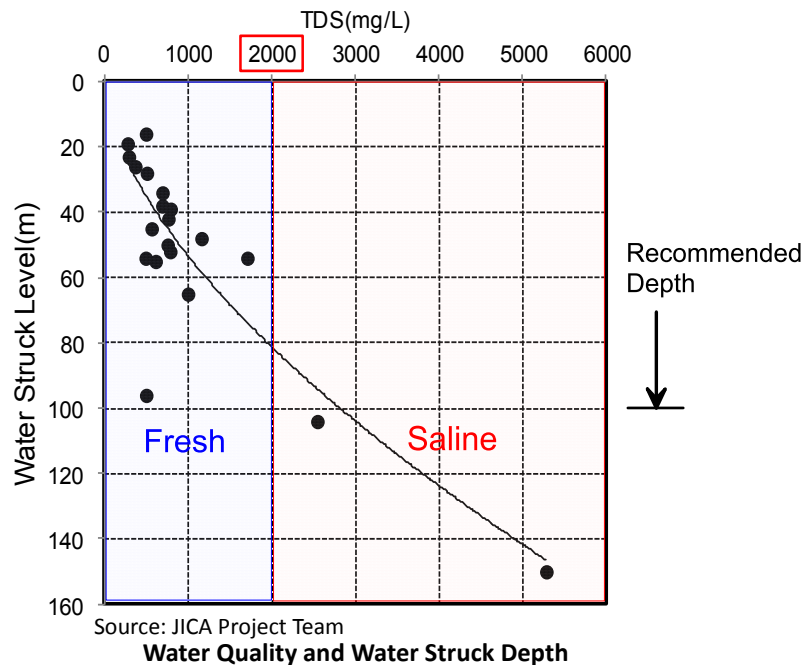
Nowadays, the scarcity of water due to drought does not cause loss to human lives, but still leads to losses in livestock despite development of many boreholes in Turkana.

It is essential to provide effective boreholes for livestock use during drought. In terms of the livestock's survival in drought, the rangeland condition is one of the focal points as well as groundwater potential. The "Natural Resource Development Belts" was formulated based on the rangeland potential map, pastoralists' migratory routes, and the groundwater potential. The detailed procedure of formulating

the development belts should be referred to in the final report. Based on the locations of the development belts, 50 proposed borehole sites were selected. These sites were then finally identified through the results of a hydro geological survey at each point.

### Appropriate maximum drilling depth in Turkana County

The following figure shows the relation between the depth of water struck level and water quality, such as Total Dissolved Solids (TDS). The water quality is anticipated to be worse if the water struck level is more than 100 m. Thus, it is highly recommended not to drill deeper than 100 m.



Following the above criteria, the ECoRAD project had 20 successful boreholes with water, out of 27 boreholes, which means its success rate was 74%.

## 27. Management system should not be 'ideal' but 'feasible' taking into consideration the capacity of the people.

### Summary:

- The system should be manageable by the people judging from their current capacity when the operation and maintenance (O&M) system of water resource is introduced to a pastoralist community, with limited experience and with a mindset of management of communal properties.
- At the same time, the capacity of the people should be developed for better management in the future.
- The stepwise approach should be applied instead of trying to achieve the ultimate goal within a short period.

### **Trend of water resource management**

- Establishment of O&M system for water resource management is essential for sustainable use of the precious resources. It has been proposed to form Water Users Association (WUA) as a formal 'organization' to manage water sources.
- WUA committees are mandated to establish a management system that entails; registration, making a constitution with rules and regulations, financial management and planning.
- Training of the WUA committee is currently based on the standard package for water resource development assistance. This is important and necessary to ensure self-sustainable use of resources, and for nurturing independence from external aid.
- However, introduction and application of the standardized WUA and management systems have largely failed in the pastoral communities in Northern Kenya.
- On the other hand, there are some systems introduced from outside that have been embedded in the pastoral society.
- People are receptive, but it will take time and adequate





## Part IV Lessons in Each Technical Area

steps for new concepts and systems to be accepted, digested, and adopted in the society, especially in the pastoral society where people have different beliefs, attitudes, and customs.

### **BOX: Adverse effect of introduction of 'ideal' management**

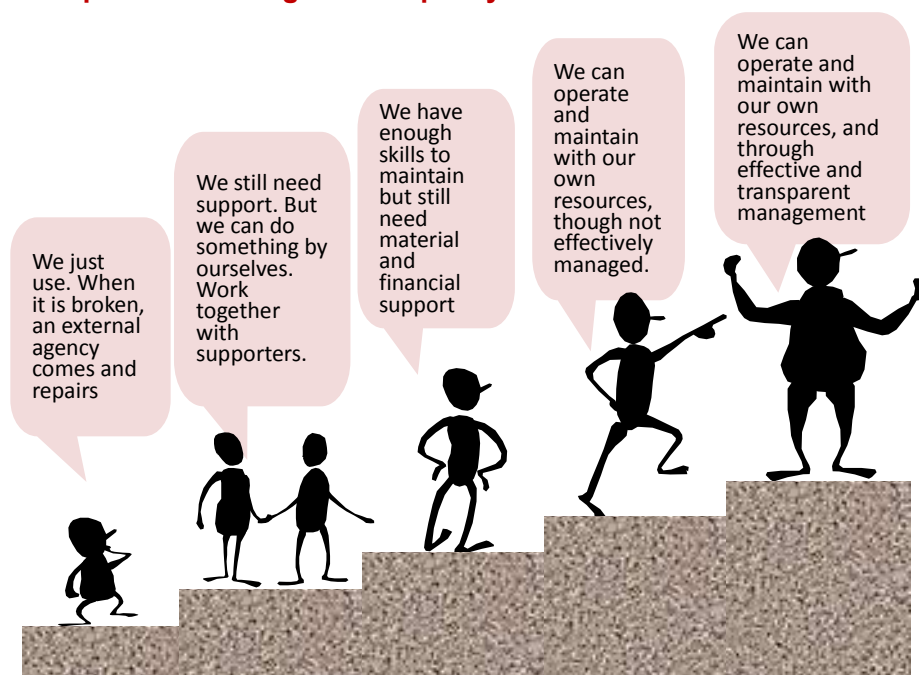
*Self-sustainable management is commonly taken as a requirement for water resource development. Community contribution is almost compulsory. But can we say that in any situation?*

*In Marsabit, water management system was introduced to all developed water sources. Following the responsibility to establish a sustainable management of water source, a fee collection system was introduced for maintenance and further development activities. After the introduction, with close monitoring by the project, one of the communities successfully saved a good amount of money, and decided to use the money to build a primary school classroom. However, as the water management committee accumulated a large amount of money, another group took over its management, with political support and power.*

*In another case, a WUA committee shared the financial information on fees collection and expenditure with the general public. Whereas this seems prudent, it has its shortcomings because the community members are not in a position to interrogate the information and assess the soundness of the management.*

*This limitation enabled the committee to misuse the funds through a purported approval by the community.*

### **Development of management capacity**

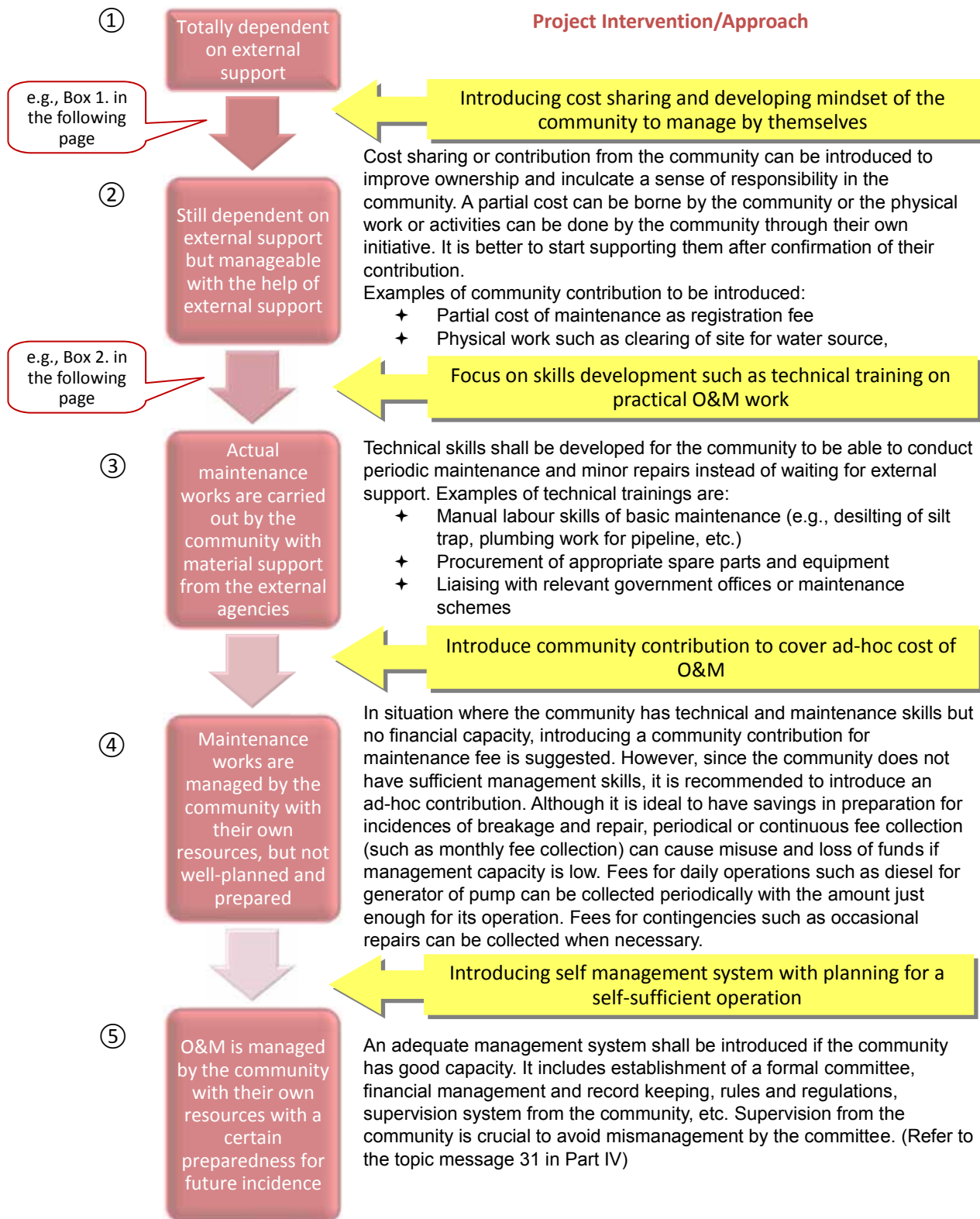


Source: JICA Project Team

### **Development Stages of Management**

**Recommended step-wise approach**

The following indicates possible interventions/approaches for each stage of the community.



Source: JICA Project Team

**Interventions at Each Development Stage of Water Management**

**Box 1: Example of intervention to transform from “dependent” to “manage with help” (from Stage 1 to Stage 2)**

*In Turkana, a remarkable number of boreholes have not been used merely due to a simple minor breakage of the hand pump. Thus cost sharing of maintenance was introduced as a precondition of developing boreholes to develop a mindset of self-sustainable management by their own:*

- *The project linked the community with the existing maintenance support scheme operated by the Diocese of Lodwar. The scheme supports the repair of hand pump system of boreholes registered under the scheme with annual registration fee of KSh.3, 500.*
- *The beneficiary community was responsible to contribute for the registration fee. Although the amount of contribution is not beyond their affordability, some communities were faced with difficulties in collecting the contribution.*
- *The project followed up the situation of collection in such communities, discussing the importance of maintenance and the O&M scheme. And at long last, all the boreholes that require maintenance were registered with community contribution.*
- *Some of the boreholes utilized the O&M scheme when they had faced minor breakage; consequently people started recognizing the benefits of contributing for maintenance. Some communities started collecting the registration fee for the coming years.*

*Although ideally, community should be able to totally manage their own affairs, it may lead to mismanagement if the project imposes a management system with fee collection to bear the repair cost. Instead, a step forward, even a small one, will become their foundation for more sustainable management.*

**Box 2: Example of intervention for the technical independence (from Stage 2 to Stage 3)**

*One of the important aspects of maintenance is the skills to perform minor technical repair. This is especially important in the remote area, where it is difficult and costly to call a technician to work on a small repair. Once people get to understand the importance of doing their own maintenance, the next step can be technical skills development, which is not a big monetary burden.*

*Arapal is situated far from any commercial town, where there is no access to any public transportation. The existing water pipeline system for Arapal was improved and a few local technicians trained on basic maintenance of plumbing works.*

*They can now identify problems and take necessary actions without relying on technicians from far away. With the support of the project, a small charge for water used was introduced where previously there was none. Although the amount of contribution is small, it now enables the management to purchase minor spares for routine maintenance and repairs.*



## 28. Involvement of the community from the planning stage

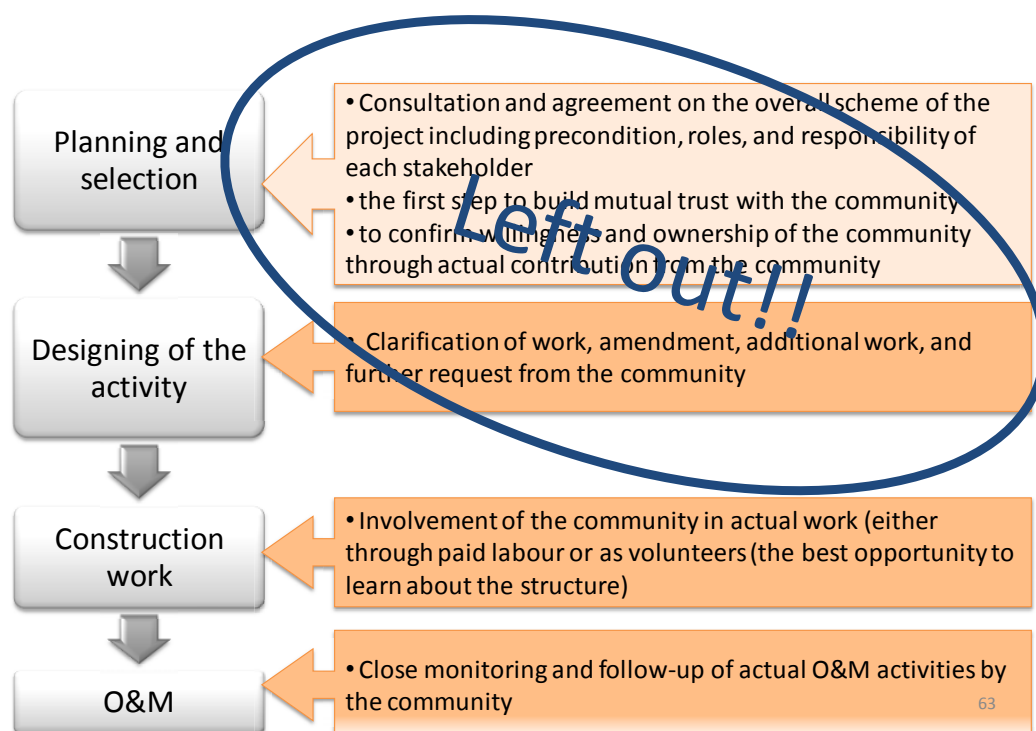
Summary:

- Sustainability of O&M of water-related structures highly depends on the initiative and involvement of the community. In order to enhance their ownership and sense of responsibility, it is important to involve people from the beginning.
- Management needs can be generated from the community itself, if the intervention meets its desperate needs, when the community is involved from the beginning of the decision making and when the method and approach are appropriate.

### Involvement of the community at each stage of implementation

Although the importance of involvement of the community for project sustainability is obvious, not many implementers have been fully embraced it.

The diagram below summarizes the necessary involvement of the community in each step of water resource development.



Source: JICA Project Team

**Interventions at Each Development Stage of Water Management**

**1. Planning and selection of the site/activity**

Consultation and agreement on the overall scheme of the project including precondition, roles, and responsibility of each stakeholder (between donor, contractor, and community) is the first step to build mutual trust with the community. In order to confirm willingness and acceptance of the community to participate actively in the project, it is preferable to define preconditions for support.

For example, prioritization of the potential project sites can be made based on the communities' commitment and contribution such as clearing of the site, collection of locally available materials, or contribution for cost sharing in advance. The project selected can then be from the community that meets these requirements.

*Confirm the level of needs and commitment before selection or starting the work in form of actual contribution from the community but not verbally.*

**2. Designing of the activity**

Explanation of the project design details to the community can enhance their ownership by enhancing their understanding of the structure (especially the parts and technologies related to Operation & Maintenance).

Several requests may be made by the community at this stage. It should be clarified to them on the limitation of budget and the need for their contribution to ensure that the donor support goes to the major project components that the community has no capacity to undertake.

**3. Construction work**

The best opportunity to learn about the structure is to participate in the actual work. The community can be involved either through paid labour or to volunteer as their community contribution.

Although the latter option is preferable, it may depend on the situation. If the community is desperate and not self-reliant, it is still feasible to provide incentives for works at the initial stage to enable

## Part IV Lessons in Each Technical Area

them experience the actual work.

Even though the ultimate goal of the project is for the community to fully contribute and be able to maintain the project by themselves, availing of incentives at the initial stage for their participation is acceptable.

#### 4. **O&M**

Actual O&M activities by the community should be closely monitored until they are adopted by the community to a certain extent. A one-off training is not enough and hands-on training is crucial.

Periodic monitoring, facilitation of operations and problem resolution when issues arise are all important roles to be played by the supporting agencies in order to establish a sustainable O&M system in the community.



## Part IV Lessons in Each Technical Area

**Box: Difference observed in community contribution as precondition depending on the needs and situation (Experience in ECoRAD Project)**

In the ECoRAD project, contribution of the registration fees for the maintenance scheme was set as a precondition for borehole development. Through observation of community contributions for borehole management, it was found that there are three important factors that affect water resource management, namely:

- i) Water scarcity or people's demand for water;
- ii) Social organization of water users; and
- iii) Economic situation or income generation.

Differences were observed from the communities in their contribution depending on the combination of factors as categorized below.

| i) Needs       | ii) Social organization | iii) Economic situation | Contribution  |
|----------------|-------------------------|-------------------------|---|
| High           | Strong                  | Relatively good         | They took the initiative to contribute their own money for the registration. Money was collected from the majority of community members, each paid a small amount. Regular water fee, such as monthly fee, was not charged because people thought this may cause conflict amongst the community members.  |
| High           | Strong                  | Weak                    | Most of the users are pastoralists who do not have cash income. They asked for financial support from outside to pay for their registration. One was supported by a construction company, and the other was funded by a politician. Currently, management committees of both boreholes are charging water users at KSh.50 per month to serve as funds for the next registration.                        |
| High           | Weak                    | Relatively good         | Registration fee was contributed by a few rich members of the community, who became the core members of the management committees. Water fee is collected monthly, and the committee decides how to use the money.  |
| Relatively low | Not strong              | Weak                    | Collection of money for registration faced difficulties. The community is not organized because homesteads are scattered in a vast area. People are using different water sources such as rainwater and shallow wells. Lack of income generation makes it difficult for them to contribute money for the registration. Moreover, there is no effective and functional money collection system in place. |

## 29. Liaise with the existing O&M scheme as a step of realistic development of O&M capacity

Summary:

- Where sustainable and self-sufficient maintenance by the community is not feasible, existing scheme of O&M shall be applied as a step forward.

### **Background-current situation of boreholes**

Paradigm of development and external support on water resource development has been shifting from increasing the number of boreholes to sustainable use of boreholes.

Establishment of new boreholes and increase in their number has been the priority in drought mitigation for decades. As a result, whilst the number of boreholes has increased, some boreholes have been abandoned or unused due to breakdown of hand pumps.

In Turkana County, 90 out of 511 boreholes are non-operational and 45 are non-functional. This is due to vandalism, insecurity, equipment problem, low yield, and borehole collapse. A good number are left unattended with breakage of the hand pumps. This means that a large number of boreholes can be revived if proper O&M system is established. Whilst importance of O&M of boreholes has been emphasized, it has been difficult for the community to fully manage the maintenance on their

own. Even the government that was expected to take care of them after installation could not manage as the number increased.

Although establishment of O&M functions has been included in the current project of borehole establishment, effective maintenance has not been developed.





**Feasible O&M under the current situation**

There are situations where communities do not have enough capacity to manage the maintenance of boreholes by themselves, and where maintenance needs are beyond the control of the government.

It is recommended that an O&M scheme is introduced with partial contribution from the community while the rest of the requirement is provided through external support.

In terms of borehole pump management, some unique maintenance service schemes were found available in Turkana. The Diocese of Lodwar has been operating a cost sharing O&M scheme for borehole hand pumps. Under the scheme, genuine damages and breakage of hand pumps can be repaired without any extra charge, as long as the community or a water resource management body registers the borehole with annual fee of KSh.3, 500.

The role of the project intervention is to ensure registration under the scheme, by encouraging the community to make contribution and linking the community with the scheme so when problems arise they are fixed by them.



Any similar scheme can be utilized. Preferable conditions of the scheme to be applied are:

- The scheme is established and embedded in the local system, and shall be operated for a certain period of time (not a project base of 2~3 years)
- The scheme itself is functioning and capable to handle maintenance work. If it relies on a short-term project, it is not sustainable.

The box below introduces examples of the schemes. Advantages and disadvantages of each scheme should be examined and applied based on the suitability in the target area.

**Box: Examples of schemes to be applied**

1). Donor funded scheme

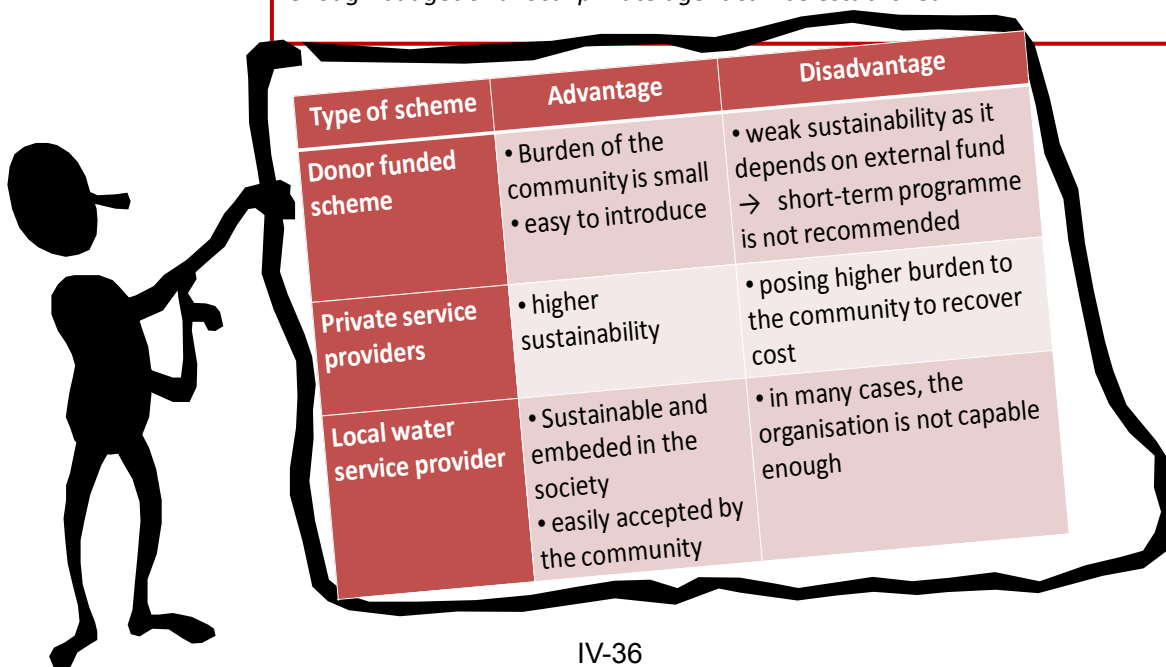
Some donor-funded programmes provide maintenance scheme with cost sharing, as mentioned in the case of the Diocese of Lodwar. Scheme should have aspect of cost sharing or designed to enhance management by the community, such as training of the community on daily care, identification of problems, and communication with relevant agencies. The advantage of donor-supported scheme is that the burden of the community is small, thus it is easy to start with, especially for a community not familiar with doing maintenance on their own. A disadvantage is the weak sustainability if the programme depends on external funds. Therefore, a short-term programme is not recommended.

2). Private service providers

Contracting out the maintenance service to a local private service provider has higher sustainability. A disadvantage of getting a private sector is posing higher burden to the community as they may need to recover the cost.

3). Local water service provider

In Turkana, there is another available scheme, although covering only the Lokichoggio and Lokichar areas. The scheme is provided by the water service providers (WSPs), registered as local community-based organization (CBO) under the Water Service Regulatory Board. These WSPs have a scheme of borehole pump maintenance service without any charge from the borehole management body, utilising their revenue from water tariff collected through their water service delivery. This kind of service is sustainable and highly recommendable as long as it functions properly. However, in the case of Turkana, both WSPs have not been able to spare enough fund for borehole repair having a list of boreholes with outstanding maintenance and rehabilitation needs. In such case, the scheme itself should be enforced to be sustainable. Ideally, the scheme should be taken over by the government having enough budget or a local private agent can be established.



| Type of scheme               | Advantage   | Disadvantage   |
|------------------------------|---|--|
| Donor funded scheme          | <ul style="list-style-type: none"> <li>Burden of the community is small</li> <li>easy to introduce</li> </ul>                       | <ul style="list-style-type: none"> <li>weak sustainability as it depends on external fund<br/>→ short-term programme is not recommended</li> </ul> |
| Private service providers    | <ul style="list-style-type: none"> <li>higher sustainability</li> </ul>   | <ul style="list-style-type: none"> <li>posing higher burden to the community to recover cost</li> </ul>  |
| Local water service provider | <ul style="list-style-type: none"> <li>Sustainable and embedded in the society</li> <li>easily accepted by the community</li> </ul> | <ul style="list-style-type: none"> <li>in many cases, the organisation is not capable enough</li> </ul>  |

### **Approaches of introducing the scheme**

A major constraint of O&M by the community is confirmation of their willingness. The O&M scheme shall be introduced to enhance their ownership and sense of responsibility. The following approaches can be taken for its smooth introduction:

- Registration to the O&M scheme should be set as a precondition for the development of a borehole. A preparatory meeting with the target community should be organized to agree on the conditions for registration.
- Ideally, the selection and implementation of the project sites should be finalized once the contribution of registration fee is confirmed. This may however still be done in consideration of the engineering work schedule (programme).
- The bottom line is to confirm actual collection of registration fee before installation of borehole pumps. In the latter case, where the fee collection is done after drilling, follow-up action is necessary. If the project cannot afford to follow-up the fee collection, it is would then be prudent to start the drilling only after getting the confirmation of its payment.

**Box: Experience of ECoRAD Project**

*The ECoRAD project, applying the abovementioned approach, attained the following results.*

*Out of 19 boreholes that require maintenance of hand pump, 16, which is all except in those areas with insecurity, contributed and registered under the O&M scheme. Some have already carried out some maintenance work through the scheme. Other communities have even started collecting money for renewal of registration for the coming years after the end of this contract period.*

*Although this approach is not totally sustainable, as it still relies on external support, it may be the most practical and realistic way for O&M of the boreholes in the current situation.*



## 30. Fee collection for O&M should not be introduced indiscriminately

### Summary:

- Collection of fee for O&M is necessary for self-sufficient operation of water sources. However, when the community is not capable enough, fee collection can be misused and users can be exploited.
- Different approaches should be applied for optimal operation depending on the capacity and social structure of the target community.

Possible options are as follows:

- No fee collection but contribute when problem occurs;
- Collect fee only for daily operation; and
- Periodical fee collection to prepare for emergency.

Each option has an advantage and a disadvantage and can be applicable or not depending on the capacity of the people.



### **Difficulties of fee collection in pastoralist community**

Mismanagement and misuse of money is common where management capacity of the community is weak. It is often seen in the context of pastoralist community in Northern Kenya as well.

The situation is however unique and more complicated in the pastoralist community in Northern Kenya due to the following reasons:

- First, in addition to the lack of management capacity, people have no concern over the money they pay in exchange for water. This is mainly because their priority is to get water, and besides, they do not have the concept of communal fund (money to be used for the community). This means that as long as they can get water, they are not concerned about the money they paid and thus no attention is given to the management of the money collected.
- Secondly, even if they try to pay attention to the collected funds, they do not have enough means and capacity to supervise the management. As a consequence of this, financial records can be easily manipulated and distorted.

## Part IV Lessons in Each Technical Area

- Lastly, fee collection can be justified even if it is not appropriate, since many external agencies encourage and introduce fee collection. Since people cannot judge the appropriateness of the fee collection system such as fair amount and rates it can be controlled by a few people leading to exploitation of the community.

### **Box: Experience of the ECoRAD Project**

*Considering the capacity of the communities in handling communal funds, the project did not introduce fee collection for the maintenance of hand-pump boreholes which do not require operational cost.*

*However, some of the committees, having knowledge of the case where water fees are collected for boreholes, discussed this with the community and decided to charge water fee. They convinced people to contribute money saying it entails maintenance cost. Although it is true, the rate decided was far more than the necessary amount. Some community members mentioned that they agreed with the fee because they were told that the project asked for maintenance cost, which was just made-up.*

### **Alternative options to be applied**

Where capacity of the community is low, introduction of a complicated fee collection system is not only difficult but can cause negative impacts.

The following alternative interventions can be applied depending on the situation of the community.

Options 1 and 2 are suggestions to be applied for immediate needs, even though ideally they should be prepared in advance so that they can react timely in case of a problem in order to have stronger resilience. Preparation is important especially during drought when people struggle to get cash.

#### **Option 1:**

Fee or contribution can be collected, not periodically, but only when faced with a problem to avoid having custody of the money that is at risk of misuse. In this option, timely repair is impossible as it takes time to collect money after the problem is identified. If the problem is very critical, e.g., they cannot get water, people can manage to generate cash (sometimes those who can afford the money contribute it as their own mutual

supporting system).

**Option 2:**

If operational cost is required (e.g., fuel for generator to run the pumps), collection of fees is done to be just enough for the operation. Misuse of money will be minimized in this situation, because if the management misuses the fund, operation will be interrupted and people won't get water.

**Option 3:**

Periodic fee collection can be introduced as a preparation for an emergency as well as normal maintenance.

The current management and supervision capacity in pastoralist communities is inadequate to prevent misuse of funds. If periodic fee collection is introduced, close and persistent monitoring will be required. Neither a one-off training nor simple visits for supervision can develop their capacity.

Financial management system should be established through practical operation and actual problem solving. Preventive management system can also be introduced to minimize mismanagement.

The following section introduces some of the methods to be applied to simplify the management and to prevent mismanagement.



## 31. Approaches of introducing fee collection for O&M when applicable

### Summary:

- When the community is responsive or has a foundation to manage communal properties, it is recommended to introduce fee collection for sustainable O&M. However, the approach should be cautious as public funds universally have a high risk of misuse.

This section introduces some tips in introducing fee collection and management to the communities who do not have enough experience in managing communal funds. The tips emphasise on prevention of misuse of funds.

- 🔒 **Tip 1. Divide roles amongst different people, not to concentrate power on limited people**
- 🔒 **Tip 2. Fee collection methods depending on the structure of water source and users**
- 🔒 **Tip 3. Introduce prevention of mismanagement mechanisms.**

- 🔒 **Tip1: Divide roles amongst different people, do not concentrate power on a few people**

The following roles should be taken by different persons:

- fee collector,
- one who records,
- one who keeps cash,
- one who has the cash box key, and
- supervisor.

### Keep the cash in a safe place!!!

Prepare a box with 2-3 padlocks and keys kept by different responsible persons.



🔒 **Tip2: Fee collection methods depending on the structure of water source and users**

Water fee collection and financial management methods differ depending on the type of water source and different WUAs due to the complexity of water supply connections and variety of users. A fee collection system at the water source varies depending on the costs of O&M to be covered, range of users, number and location of water supply points, and capacity of the community.

When there is a major operation cost that is closely related with the amount of water used such as fuel cost for a generator for a borehole pumping system, the water tariff is set based on the consumption. Alternatively, when there is no major constant operation cost, a fixed amount of fee can be charged over a certain period of time.

Fee collection for domestic use may be different from that for livestock use. Structures of the water supply facility also determine the fee collection method; an accurate but complicated fee collection system may not be feasible at a water source when there are several water supply points with mixed users.

Simple management methods should be introduced to WUAs where basic capacities, such as literacy level of members, are relatively low.

The following table summarizes the advantages and disadvantages of different water fee collection systems, in particular the condition of the water source and other factors.





*Part IV*  
*Lessons in Each Technical Area*

**Advantages and Disadvantages of Different Water Fee Collection**

| Collection Method      | Advantage   | Disadvantage   | Suitable Situation to Apply the Method  |
|------------------------|---|--|---|
| Daily collection       | Able to collect actual amount against use.<br>Charges fairly even for those who use it temporarily.   | Need to assign a person who will collect fee every day at the site; this would entail additional cost.<br>More work and complexity in recording daily payments in small amounts.<br>Higher risk of mismanagement at the time of collection.                  | When seasonal short-term users are the majority.<br>If there is a collector who can adequately handle the daily recording.  |
| Monthly collection     | Simpler in collection and recording.<br>Less risk of mismanagement of the collections as fee can be collected by the treasurer and officials with receipts. | Difficult to set the fee for seasonal and short-term users.  | When the users are almost fixed for relatively longer term.   |
| Fee as per consumption | Fair and able to collect exact amount per consumption.<br>For livestock use, the number of livestock can be counted instead of measuring water consumption. | Difficult to determine the consumption of each user when there is no device to measure the consumption.<br>Capacity of the collector is required to calculate the fee per use.<br>Need to assign a person to measure the consumption or count the livestock. | When it is necessary to collect fee based on water consumption to cover the increased cost.<br>When the operator can account the estimation of consumption based on the number of livestock.<br>When there is an appropriate device to measure the consumption. |
| Fixed charge           | Simple in collection and recording.   | Difficult to judge the adequacy of fee.<br>Less equity and fairness as the charge is same for all regardless of consumption.   | When there is no major operational cost to be covered as per increase of consumption.<br>When all the users can agree on the fixed amount.<br>When the rate per use is too complicated to be handled by the community.  |

Source: JICA Project Team



**Tip3: Introduce preventive system against mismanagement.**

Example 1: Introduction of a money collection box



To reduce the risk and temptation of misuse of funds, collection boxes and saving boxes can be introduced. A saving box has three locks whose keys are each held by three different officials apart from the treasurer while the box is kept by the treasurer so that it can only be opened when all of them are present. Payments by users are put directly in the collection box by the payer under the operator's observation and not handed to him. A collection box has a lock and the key is kept by the treasurer. He opens the box only when the operator brings it to him for counting and recording in his presence.

Although these preventive measures are not perfect against misuse, they reduce temptation because the procedure is more complicated.

Example 2: Installation of a water meter

Water meters can be introduced to determine the adequacy of water tariff and fee collection against water usage.

Considering the case of watering livestock, it is not practical to charge water fee based on a water meter since some livestock groups take water at the same time from the troughs. Water meters are therefore used to estimate the approximate amount


of money expected to be collected in a certain period of time that can be calculated from the water consumption and for setting tariffs. This enables the WUA as well as the community to estimate the expected revenue to be collected from water sales. It thus works as a tool to prevent mismanagement and misuse of funds as well as against wastage of water. This however still requires a certain level of understanding for the people to be vigilant.

Tip for calculation of expected amount of fee to be collected  
e.g. If the average water fee is **Ksh 2/= per 20litre jerry can**


| Water consumption    |   | Expected fee collected |
|----------------------|---|------------------------|
| 12.000m <sup>3</sup> | → | 12.000 → Ksh1200       |
| 8.523m <sup>3</sup>  | → | 8.522 → Ksh852         |

*Just remove the last number!!*

Example:



1.238m<sup>3</sup>



31.132m<sup>3</sup>

$31.132 - 1.238 = 29.894m^3 \rightarrow 29894 \rightarrow Ksh2989$

Source: JICA Project Team  
**Calculation of Expected Water Fee**

## 32. Amalgamation of introduced system into customary social system

### Summary:

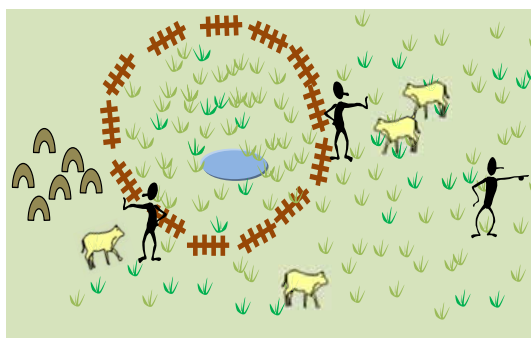
- Communities' traditional institutions are crucial especially in resource management where they have previous experience and way of managing natural resources.
- On the other hand, modernisation, formal systems by the county and state government, and noble systems introduced by external agencies have been influencing their traditional society.
- Even though the traditional system should be respected and taken as an effective system, changes are still inevitable.
- It is important to seek a way to collaborate with the local system by supporting them to adopt other systems to survive in the changing society with macro influence.

### **Aba Herega system in Borana communities**

Different communities living in Marsabit have their own traditional natural resource management systems. The most widely practiced system is the 'Aba Herega System' in Borana communities, where an owner of the water pan is appointed as *Aba Herega* by the whole community living in a given location (locally called 'dedha'). The *Aba Herega* is thus charged with the responsibility of water distribution and enforcement of related

by-laws at a given pan/dam. This position is normally held or given to a male and is often a powerful and respected position.

*Aba Heregas* supervise the use of water and pasture around the water source on a daily basis with the help of two to three village elders who support supervision at the site. They serve the community on a voluntary basis.



### **Needs of formal legitimate system**

Being a part of the state, it is inevitable for pastoralists to be involved in national and county governing systems. national government systems such as administrative chiefs have control with certain authority that is superior to the traditional system, often without formally recognizing the

local traditional system.

With regarding to water resources management, the Water Act 2002 established the Water Resources Management Authority (WRMA), that regulates the structures to manage water resources. Management of water resources are supposed to be delegated to the community through the formation of Water Users Association/Water Resource Users Association by formal registration by the government.

For a community organization to receive funds or support from government or donor agencies, it often requires formal registration and a management structure including financial management put in place.

### **Combination and collaboration between conventional community organization and formal legitimate system**

In the above mentioned situation where traditional systems and official systems co-exist, combination and collaboration of these systems is necessary. While the legitimate formal organization might be introduced, traditional authority and system would still have a strong influence on the people. The people also trust this system.

On the other hand, the traditional system and organization needs to harmonise and align itself with the formal system in order to be recognised by official agencies and to receive public support. As a way to function effectively in these circumstances, the formation of a formal legitimate organisation that involves the traditional system is recommended.

For example, *Aba Herega* System should be incorporated in the formal WUA. *Aba Heregas* and their elders take the lead in the management of water resources, while WUA committees can liaise with formal authorities and external organizations. For the external organizations, even though their contact can be WUA committees, they should understand the traditional system incorporated therein.

**Box: *Aba Herega* in WUA of Water Pans**

*In the case of the ECoRAD project, relation with *Aba Herega*, whilst forming the WUA, is critical for the following O&M activities. Where *Aba Herega* is fully involved and respected, newly introduced management has worked better. Better management of pan has been observed in the sites where *Aba Herega* System is incorporated in the management system. Communities' activities such as fencing of water pan with their own available resources, partial desilting of the pan, and hygienic management of the pan including cleaning of animal drops have been initiated by the community under the leadership of the *Aba Herega* together with the WUA.*

### 33. Livestock market conditions and potentials in Marsabit and Turkana

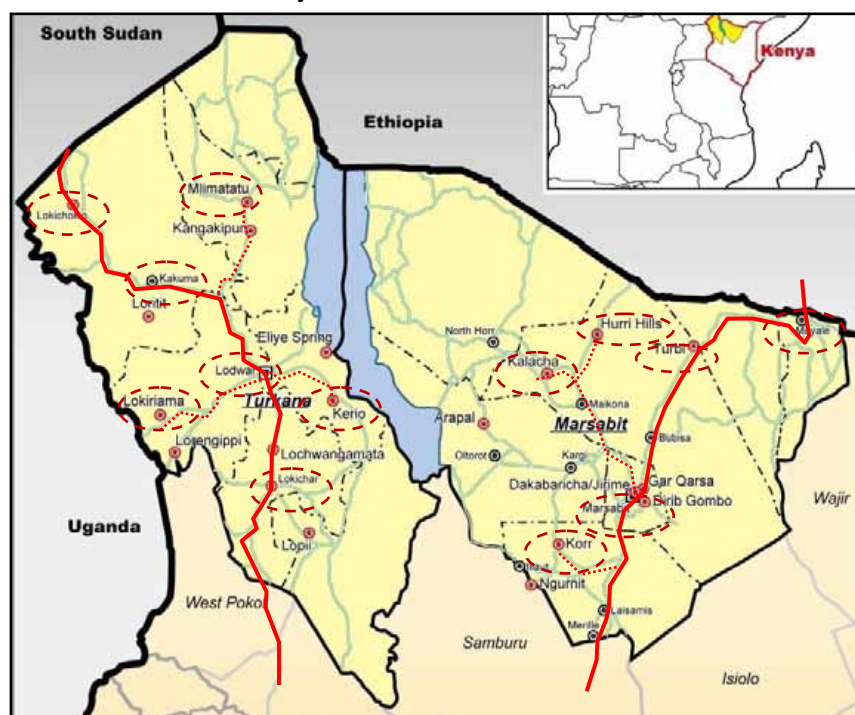
Summary:

- There were so many projects that were implemented by the donors and government for the establishment of the local livestock market. However, in many cases, those activities did not fully meet the projects' intended objective..
- The livestock market conditions in Marsabit and Turkana County were studied and summarized in view of: (1) livestock migratory movement, (2) identification of ethnic groups, (3) road access, and (4) security situation.

Improvement of the livestock market value chain and the revitalization of the livestock market are focal issues in Northern Kenya. Although the county government and donors have built several livestock markets, these market facilities are not always utilized efficiently.

The project team studied the livestock market conditions in Marsabit and Turkana in terms of: (1) livestock migratory movement, (2) identification of ethnic groups, (3) road access, and (4) security situation.

The following drawing indicates the relationship between major towns for livestock activities and major roads.



Source: JICA Project Team

Livestock Markets and Main Access Route

## Part IV Lessons in Each Technical Area

The livestock information and observations, which were obtained through actual site observations and interviews with the livestock market stakeholders in the project are summarised in the following table.

**Livestock Market Conditions and Potentials in Marsabit**

| Town                   | Livestock Potential  | Condition about Livestock Trade  | Location / Access to Town  |
|------------------------|----------------------|--|--|
| <b>Marsabit County</b> |                      |  |  |
| Marsabit Town / Jirime | Very high            | <ul style="list-style-type: none"> <li>- Currently, this is <u>the center of the livestock trade in Marsabit County</u>. From this town, several trucks depart to send the livestock to the capital area. However, the traffic to the capital is not so active due to the current road condition in A2 national highway road.</li> <li>- <u>All of the ethnic groups</u> have their business in this town.</li> <li>- Marsabit market has livestock constantly; however, it seems that there are more animals in the wet season due to the pastoralist's migration pattern.</li> </ul> | It is quite a good location for livestock trading due to its location along the A2 national highway. When the pavement construction of this A2 road is completed, Marsabit's livestock market is expected to experience a drastic improvement.                   |
| Moyale                 | High                 | <ul style="list-style-type: none"> <li>- This town is currently <u>a big trading point around Kenya/Ethiopia border</u>. The animals going to Ethiopia pass through this town, in particular, camels which are in high demand in Ethiopia.</li> <li>- Moyale is a town of <u>Borana</u>.</li> <li>- In the dry season, a lot of Borana's and Gabra's livestock migrate and graze around the Moyale area.</li> <li>- Ethnic conflicts (Borana/Gabra) sometimes occurred around this town in the past, and had always influenced the trading activities.</li> </ul>                      | It is a good place for livestock trading due to its location that is near the national border and along the A2 national highway to Nairobi. When the pavement construction of the A2 road is completed, the livestock market will have an improvement.           |
| Turbi                  | High                 | <ul style="list-style-type: none"> <li>- Currently, this town has a livestock market, but not so active. It is strongly expected to be another trade center in Ethiopia.</li> <li>- This is a town of <u>Gabra</u>.</li> <li>- In the dry season, a lot of Borana's and Gabra's livestock migrate and graze near this town.</li> <li>- Ethnic conflicts (Borana/Gabra) sometimes occurred around this town in the past, and had always influenced the trading activities.</li> </ul>   | - Ditto -  |
| Korr                   | High, but takes time | <ul style="list-style-type: none"> <li>- Currently, this town has a good seasonal center of livestock trade (in the wet season only). However, further development is not expected unless the road access to/from the A2 road is improved.</li> <li>- This is Rendille's town.</li> <li>- In the wet season, there are so many livestock around this area. But most of the livestock migrate to the southern area in the dry season.</li> </ul>  | Currently, its poor accessibility is the only obstacle to livestock development. Because there are lots of animals during the wet season, the road access is too muddy. There is also no road improvement plan, so the development of the market will take time. |
| Ilaut                  | High                 | <ul style="list-style-type: none"> <li>- Currently, this town has a good livestock center for Rendille and Samburu's livestock.</li> <li>- Although there is a rustic market facility, many people, not only for the livestock but also for other commodities gather for trade/business.</li> <li>- This is Samburu's/Rendille's town.</li> </ul>  | Currently, bad accessibility is the only major obstacle for their further development.   |

## Part IV

### Lessons in Each Technical Area

|            |                     |   |  |
|------------|---------------------|---|--|
|            |                     | - This is located in the dry season grazing area, but even in the wet season, livestock comes from other area looking for a good price for the trade. Thus, there are always livestock around this area from Rendille and Samburu area.   |  |
| Kalacha    | High but takes time | - There is a good potential for the livestock trade, in particular, for the Gabra people.<br>- In the dry season, many of the livestock, mainly from Gabra, gather at a spring in this town. However, there is no active livestock market currently in this town.<br>- Due to the current bad accessibility, market development is not expected unless the road is improved.<br>- This is <u>Gabra's town</u> . | Although there is a high potential for the livestock market, in particular for the Gabra in the dry season, there are no currently any active livestock activities.<br>There is no road improvement plan, so the development of the market will take time. |
| Hurri Hill | High but takes time | - This has good potential for livestock trade, in particular, for the Borana and the Gabra people.<br>- In the wet season, a lot of the livestock of Borana and Gabra gather in this area.<br>- Due to the current bad accessibility, market development is not expected unless the road is improved.   | - Ditto -  |

Source: JICA Project Team

#### Livestock Market Conditions and Potentials in Turkana

| Town                  | Livestock potential | Condition about Livestock Trade   | Location / Access to town   |
|-----------------------|---------------------|---|---|
| <b>Turkana County</b> |                     |   |   |
| Lodwar                | Very high           | - Currently, this town is <u>the center of the livestock trade in Turkana county</u> . There are several trucks from the capital during the high trade season. However, the traffic to the capital is not so much developed due to the current road condition on the national highway.<br>- Throughout the year, the livestock gather at this market every day. | It is the best place for livestock trading due to its location. When pavement construction is completed (presently the plan is being formulated), Lodwar livestock market will have a drastic improvement.          |
| Lokichar              | High                | - Currently, this town is one of the major trading points <u>in Turkana South</u> .<br>- However, the development of livestock is stagnated due to the road access..  | It is a good place for livestock trading due to its location, i.e., near the county border to the south.<br>When the road pavement improvement is completed, the livestock market will also have an improvement.    |
| Kakuma                | High                | - Currently, this town is the livestock center <u>around Loima area</u> .<br>- Due to the big consumption area in Kakuma, the demand of livestock is constantly high.<br>- However, presently, there is no active trade with the external traders.  | It is a good place for livestock trading due to its location and the large number of consumers in Kakuma Town.<br>When the pavement improvement is completed, the livestock market is also expected to be improved. |
| Kerio                 | High                | - Currently, this town is <u>one of the prominent livestock centers around the south side of the Turkana Lake area</u> . It is highly expected to be developed due to the market facility   | Currently, the access to the main road is not so bad even in the rainy season.<br>When the connections and relations with external traders are established, significant increase of trade will be                   |

## Part IV Lessons in Each Technical Area

|             |                       |  |  |
|-------------|-----------------------|--|--|
|             |                       | <p>improvement by the project to accelerate the trade with external traders.</p> <ul style="list-style-type: none"> <li>- Although the markets in Turkana operate every day, Tuesday is the market day in Kerio market, which attracts many merchants that sell many kinds of commodities.</li> </ul>  | <p>expected in this market.</p>  |
| Lokichoggio | High but takes time   | <ul style="list-style-type: none"> <li>- There is a good potential for livestock trade, in particular, <u>with the South Sudan people.</u></li> <li>- However, due to the current security situation, market development is not expected unless such conflict is alleviated to some extent.</li> </ul>   | <p>Although currently, there is a high potential for livestock market, it is not so much active in this town.</p> <p>Peace building activities are highly required.</p>  |
| Milimatatu  | Medium but takes time | <ul style="list-style-type: none"> <li>- There is a good potential for livestock trade, in particular, <u>for the animals from Northern Turkana's sub-county area.</u></li> <li>- This town is located in a seasonal migratory route between the Turkana lake area and the rich dry season grazing area in Northern Turkana and Kibish area.</li> <li>- Due to the current bad accessibility, market development is not expected.</li> </ul> | <p>Although currently, there is a high potential for livestock market, there is no active livestock market in this town.</p> <p>There is also no road improvement plan, so the development of the market will take time.</p> |
| Lokiriama   | Medium but takes time | <ul style="list-style-type: none"> <li>- There is a good potential for livestock trade, in particular, <u>with the Uganda people.</u></li> <li>- <u>In the dry season,</u> a large number of livestock migrates to this area that results to a high potential of supply.</li> <li>- However, due to the current security situation, the market development is not expected unless such conflict is alleviated to some extent.</li> </ul>     | <p>Although currently, there is a high potential for livestock market, there is a not so much active livestock market in this town.</p> <p><u>Peace building activities are highly required.</u></p>                         |

Source: JICA Project Team





## 34. Livestock market tendencies: selling and buying

### Summary:

- Basically, the livestock market in Northern Kenya has a tendency of supply and demand.
- The high supply period is from January to March, while the low supply period is from April to July.
- The high demand period is from July to September, while the low demand period is from January to March.
- As mentioned above, there is an obvious mismatch between the supply and demand during the period from January to March. If this mismatch is solved, livestock trade in Northern Kenya could be improved well.

### **Seasonal tendency of supply and demand of livestock in Northern Kenya**

The following major and typical trend of the livestock's supply and demand was actually observed in Turkana County by the project's livestock experts. However, similar trend can be seen in other arid and semi-arid land (ASAL) areas of Northern Kenya.

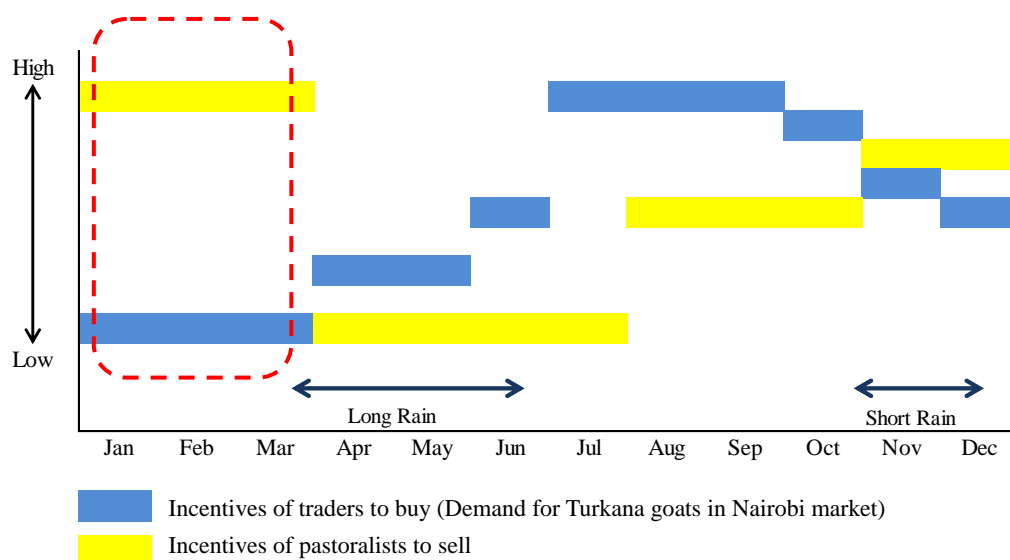
### Pastoralists' incentive to sell (normal year)

- Pastoralists' incentive to sell increases in January since the beginning of the school year means a need for cash. On the other hand, the purchasing desire of the general consumer is diminished with the increase in spending. Furthermore, forage becomes extremely scarce during the dry months of January, February, and March. The livestock begins to lose weight, and the pastoralists' incentive to sell increases as it becomes more difficult to keep the animals.
- The livestock begins to gain weight from April through July when the wet season begins and when the pasture conditions improve. The pastoralists have less incentive to sell. The wet season is also the time for births and mating.
- When the wet season ends around August, the body-weight of the livestock has increased and the pastoralists are relatively eager to sell,

## Part IV Lessons in Each Technical Area

as the improved condition of the livestock means an increase in the price per head.

- The incentive to sell is high during the Christmas season when the general demand increases and prices rise accordingly.



Source: JICA Project Team

### Supply and Demand in Turkana Livestock Markets

#### Livestock traders' incentives to buy

- Turkana goat is popular in the Nairobi market because of the good quality of its meat. However, during the months of January, February, and March, its predominance in the Nairobi market is diminished due to strong competition from the relatively large-sized goats from the Northeastern regions. There is also a decrease in the large-scale traders' incentives to buy.
- As the condition of the livestock improves with the onset of the wet season around April, the decreased incentive to buy of traders now begins to see an improvement.
- Although it depends on the rainfall condition, the traders' incentive to buy increases after the wet season ends around July to October. Also, this is when the livestock is in good condition because of an increased bodyweight. As the demand increases, so does the price per head. During this period, there is an increase in the number of large-scale traders transporting goats to the Nairobi market.
- Although this also depends on precipitation during the short rainy season in November and December, livestock generally begin to lose

weight and also lose the competitiveness against the other regions in the Nairobi market. As selling in the Nairobi market becomes more difficult, the traders' incentive to buy begins to diminish.

**Imbalance in supply and demand in livestock market**

In addition to the tendency of fluctuation of supply and demand in the livestock market, quantitative balance should be seized for the proper understanding of the markets.

The figure below shows the results obtained from the study of the Lodwar livestock market in 2012 and 2013. The figure indicates the monthly total livestock offered and the total livestock sold at the sale yards. In particular, regarding the number of shoats traded in Lodwar in 2012, the total offered (supply) was far more than the total sold (demand). One of the reasons may be that the price offered by the buyers is too low to settle in the trade.



Source: JICA Project Team

**Offered and Sold Animals in Turkana Livestock Market**

In this figure, it is also observed that there is a sudden increase of demand in the period from July to October 2013.

**Points to be improved in livestock trade**

- 1) Livestock management of appropriate trade timing with forage

The timing of the gap between the demand and supply may be improved, if it is possible to control the decreased body weight with supplemental feed such as crop residues, leguminous tree pods, and hay, in the short rainy season (from October to December) when the shortage of the feed begins. As a result, it will be possible to raise the price of the goat and the number

## *Part IV*

### *Lessons in Each Technical Area*

of the deal of the goat. This kind of activity anticipates a synergetic effect produced by other programs in terms of linkage activation of the livestock markets and the enforcement of the drought resilience practices.

To improve the current situation, the following programs need to be implemented, hopefully, not only in the short run but also in the long term.

Possible programs:

- (a) Reseeding program
- (b) Rangeland management
- (c) Improvement of livestock health through veterinary supports
- (d) Livestock off-take training program for producers
- (e) Feedlot program
- (f) Training producers on feed conservation techniques e.g. hay stacking during the wet season for feeding during the dry season.

#### 2) Market linkage and vitalisation

As shown in the figure on the unbalanced condition of trading, supply exceeds demand in certain times. To improve such unbalanced conditions, external traders, such as traders from Nairobi, should be linked to the local livestock market continuously and constantly. However, there are several obstacles which make the external traders unwilling to go to local markets.

The major obstacles are:

- Off- and on-load facilities, such as loading lump, holding pen, etc., are not available in the local market. Thus, Nairobi traders cannot send their truck to such local market.
- Market day is not specified. Consequently, the livestock are not gathered in one day and the traders' truck are obliged to stay for several days for filling up their truck with animals. Facility improvement is inevitable.

Possible programs:

- (a) Livestock market facility modernisation program
- (b) Livestock off-take training program for Livestock Market Association (LMA)
- (c) Livestock market linkage and vitalisation program (including market day setting)
- (d) Heifer exchange program (see the next chapter)

## *Part IV*

### *Lessons in Each Technical Area*

Proper consultations and organization of the marketing programme is required between the traders and LMA officials.

Address security concerns in the area.

#### 3) Livestock market information improvement

Since all the livestock producers are keen on the livestock selling price in the market, they seem not to be sensitive about price fluctuation and its trend. Even for those who know that the information is important in the livestock market for the producers, distribution center's buyers, meat processors, retailers, and exporters, it has not yet been shared well by LMA that collects the data.

The following are sample programs for improving the current situation of market information.

#### Possible programs:

- (a) Livestock information collection and sharing reinforcement program
- (b) Livestock producers' association establishment and capacity development program
- (c) Livestock broadcast program by radio

Based on the concepts and approaches mentioned above, there were several livestock value chain programs implemented in the project.



## 35. How to vitalise the livestock trades in Northern Kenya: Heifer Exchange Programme

### Summary:

- The ECoRAD project tried to find a way to facilitate pastoralists to sell their castrated animals at peak value in the market.
- The project had innovatively formulated the “Heifer Exchange Program” in Marsabit in which the project provided heifers for pastoralists at the regular market price to motivate pastoralists to sell their castrated animals for obtaining funds for new heifers.
- Throughout the implementation of the program in Dirib Gombo's livestock market from January to August 2013, it was estimated that there were at least 667 heads of castrated shoats brought and sold in the markets in exchange for the project's heifers. This was equivalent to 46% of the total number of animal sales, i.e., 1,435 heads, in the market in that period. Thus, it was confirmed that the program almost doubled the total livestock sales.

### **Why vitalisation of livestock trade is necessary?**

The improvement of the livestock market value chain and the vitalisation of the livestock market are focal issues in Northern Kenya. However, possession of livestock is prestigious in pastoralist societies since time immemorial. They do not sell their livestock unless they need immediate cash for specific reasons, such as for buying food, education fees, etc.

The pastoralists wish to keep livestock in their hands for as long as they can. According to an interview survey by ECoRAD, only 1% of the interviewees responded that they sold their animals to earn cash to be able to buy new animals.

However, such an attitude may lead to the following disadvantages in terms of the natural resource management and the livestock market trading in Northern Kenya:

- Old castrated animals kept by pastoralists decrease their market value year by year.
- Old animals do not have strong resilience against drought and are the

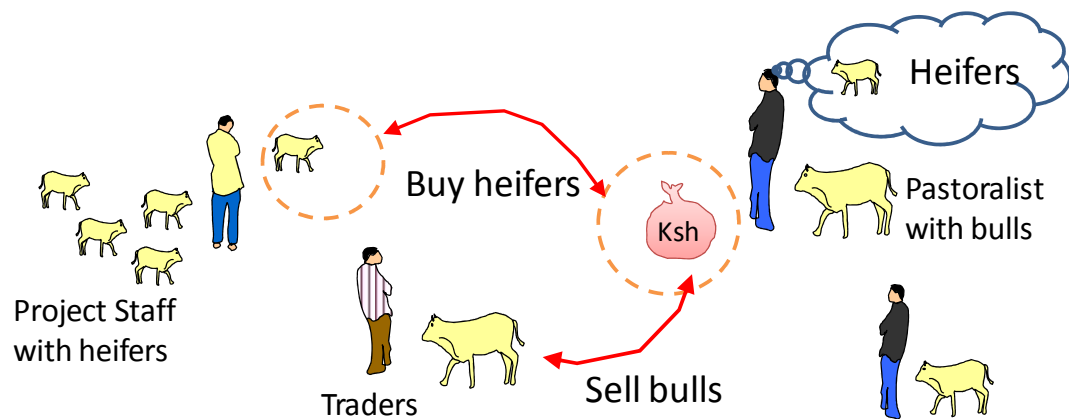
## Part IV Lessons in Each Technical Area

first to die during drought.

- While the castrated animals consume water and fodder in the fields, they contribute nothing to animal reproduction. Thus, if herds of old castrated animals are dominant in Northern Kenya, the county's overall livestock productivity will be reduced; water and fodder will be consumed with no contribution relation to the prosperity of the offspring.

### What is Heifer Exchange Program?

The project aimed to vitalise the livestock market trading in Marsabit by introducing the "Heifer Exchange Program".



Source: JICA Project Team

**Schematic Image of Heifer Exchange Program**

Procedure:

- (1) The project buys the heifers and sells them in the market at normal prices.
- (2) The pastoralists who wanted to buy the heifers could bring their livestock and sell them in the market to obtain cash for the heifers.
- (3) The pastoralists who sold the livestock could buy the heifers from the project.
- (4) In addition, the pastoralists who wanted to have cash for their basic needs such as food and school fees, can avail of the market in the program, which attracts pastoralists who want to buy heifers.
- (5) The market will have more livestock trade and become vitalised.

**Effects of the Program: livestock trade in the market increased almost twofold under the Program**

During the period of eight months from January to August 2013, the project had been providing heifers, as shown below, in Dirib Gombo's Livestock Market.

**Sold Heifers by the Program in ECoRAD Project (January-August 2014)**

|        | (1) Number of heifers provided by the project and bought by pastoralists [heads] | (2) Average selling price of heifer [KSh/head] | (3) Required number of castrated shoats to be exchanged for heifer [heads]<br>=(2)÷4,868* | Estimated number of castrated shoats to be sold in the market in exchange for heifers [heads]<br>= (1) x (3) |
|--------|--|--|---|--|
| Camel  | <b>22</b>  | 51,477   | 10.57   | 233  |
| Cattle | <b>85</b>  | 25,688   | 5.28  | 448  |
| Shoats | <b>266</b>   | 4,728  | 0.97  | 258  |
|        |  |  |   | <b>Total 939</b>   |

\*: Market selling price of a castrated shoat is assumed at KSh4,868 based on survey data.

Source: JICA Project Team

The above number of 939 heads was estimated based on the assumption that all persons obtained cash by selling their castrated "shoats". However, it was actually found out that there were several persons who obtained cash from other income sources; the percentage of such persons was 29% according to an interview survey made by the project.

Taking such persons into consideration, it was estimated that 667 heads (939 x 71%) of castrated shoats had been sold in the market.

During the eight month period of the program, the total number of shoats sold in the market was 1,435 heads. Without the program, which enabled the people to sell 667 shoats, only 768 (1,435-667) shoats would have been sold. It means that the program increased the total number of shoats from 768 to 1,435, equivalent to an 87% increase.

**Effects of the Program: livestock productivity is increased**

As explained above, the program allowed the pastoralists who wanted to have heifers to sell 667 shoats in the market. In other words, through the program, the project has extracted at least 667 castrated shoats from the rangeland, and replaced them with the above number of highly productive animals without forcing it on the pastoralists.

Consequently, the livestock's productivity has increased significantly due to the program. As a result of this the castrated animals which only consume grass in rangeland and do not contribute to productivity were replaced with heifers, which produce offspring and milk. In addition, the livestock's mortality during the drought improved as a result of exchanging the old animals with young heifers, which have strong resilience against drought.



## 36. “Reseeding Farm” is one of the recommended low cost and easy activities for the community.

### Summary:

- In Northern Kenya, there are not many activities that can be introduced and successfully developed on a voluntary basis by the community, both in terms of human and financial resources. One easily implementable activity for livestock issue against drought is to establish reseeding farms.
- Objectives of the reseeding farms are:
  - 1) To provide hay for livestock during dry seasons.
  - 2) To produce seed for sale as income generation by the community and for the expansion of pasture area.
  - 3) Pasture establishment by reseeding to promote business activities as part of the revitalization of the livestock market.

The reseeding farm program provides rain-fed growing grass field, which is surrounded by spiny twigs in order to prevent the animals from grazing inside during the growth period, in particular, during the rainy season.

In the ECoRAD project, the Lokichoggio, Loritit, and Kangakipur community people decided by themselves to try to establish a reseeding farm based on the action lists of their “community action plan (CAP), which were formulated in the CMDRR workshop and follow-up training on drought management committee, without external financial support. Thus, the project did not provide any financial support but only technical advice on their activities.

### **Advantages and disadvantages of this activity**

The advantages are:

- The required technique for reseeding farm is simple such that ordinary pastoralists can learn and apply it.
- The required expense is also so little that the groups who wanted to start the activity can afford it. The only required essential materials for reseeding are the seeds, which are sometimes distributed by the

## Part IV Lessons in Each Technical Area

Ministry of Livestock, free of charge. Apart from the seeds, the only other requirement is manpower for building the fence and spreading the seeds.

- In Turkana, reseeding business has been operated successfully in a few sites and it was started only through the community's manpower and initiative. The people can see such good examples of success and could easily understand what they need to do..
- It can provide a learning site (demonstration plot) to the pastoralists on pasture production, conservation, and pasture utilisation.



*Photos: Community people participated in the reseeding activities on a voluntary basis for building the fence and spreading the seeds in their reseeding farm plot.*

The disadvantages are:

- Strong leadership of the area leader, such as location chief, ward administrator or any other influential leader, is required to prevent the pastoralists from getting into the reseeding plots with animals for grazing.
- The growth of grass in the reseeding farm depends on the natural rainfall and the success of the activity is significantly influenced by the weather condition. Thus, these activities could not have good results especially if the activity had only one or two rainy seasons during the project period.
- The benefit of a reseeding farm is not as big as other activities which are implemented at a high cost, especially if the size of the farm is limited.

### **Key issues for success**

Most pastoralists have the tendency of grazing their animals to a rich rangeland without regard for who will take care of the pasture in the

## *Part IV*

### *Lessons in Each Technical Area*

reseeding farm and what effort they ought to put into it. In such a case, a conflict will most likely arise between the pastoralists and the reseeding farm group. This is a crucial diverging point which determines whether the reseeding activity will be in vain or successful. If a good mediator can manage to solve this issue, the reseeding farm can be sustained for a long time.

If such strong leadership is lacking, one of the other options is to establish a reseeding plot within individual compounds where no other people can intrude. In the case of Kangakipur Community, in the ECoRAD project, the community people made reseeding plots in this manner to avoid conflicts with others.

Through this approach the pasture would be improved when it rained. Even though the size of the plot is small and the overall effect is limited, certain benefits could still be realised by the individuals due to their own initiative. This could also provide a learning site and opportunities for awareness of the pastoralists on forage production, rangeland conservation, and effective pasture utilisation.



## 37. Establishment of a good organisation for livestock is an important key

### Summary:

- The Livestock Market Associations (LMAs) is surely a focal actor for the livestock market activities. The LMAs collect livestock fees, maintain the facilities, and take part in other important activities. The strengthening of LMAs is crucial for the long-term operation of the livestock markets.
- In addition, the pastoralists (livestock producers) and traders should be trained and strengthened.
- Looking at the composition of the LMA members, it is noted that there are some cases where LMA committees consists of only traders, and not pastoralists. In such a case, the operation of the livestock markets by LMAs might be biased based on the traders' benefits and may even hinder the livestock trading between the traders and the producers.
- To avoid this situation, strong producer associations should be formed by the pastoralists so as to improve their bargaining power.

### **Proper composition for good function of LMAs**

The focal organisation for communal livestock market activities is the LMA, which collects the livestock fees, maintains the facilities, and takes part in other important activities. An active livestock market needs a well-organized LMA for its long-term operation.

However, in some LMAs, all the committee members are traders and pastoralists are not included. In such case, there might be some possibility that the operation of the livestock markets by LMAs might be biased based on the traders' benefits. Thus a proper composition of the LMA that includes both pastoralists and traders is strongly required for the benefit of both parties.

### **Strengthening the pastoralist's bargaining power through the establishment of their own organization**

In order to increase the pastoralists' bargaining power and maximize their

benefits in the communal livestock markets, it is important to organize the pastoralists for the livestock market activities against the traders.

**Box. Experience in Kerio Livestock Market in ECoRAD Project**

In the current condition of the Kerio livestock market, the project advocated and assisted the pastoralists to formulate their own organisation for improving their profit.

The pastoralists, who mainly stay in Kerio Town, gathered and formulated a pastoralists' group for the livestock trade, so-called *Kerio Livestock Producers Association*.

After the establishment of the *Kerio Livestock Producers Association*, the following benefits were observed:

- The *Kerio Livestock Producers Association* collected market price information from the other markets in Turkana, and tried to apply it on the market prices in Kerio's livestock market in their negotiations.
- Their mindset was significantly improved to compete with the traders for better prices and more profit. They are more confident now that their profit should be protected and produced by themselves.

In addition to the capacity development of the organisation in Kerio livestock market, the project improved its existing rustic facilities into modern and effective facilities, through the provision of loading and off-loading ramp, iron holding pens, shade houses, and marketing stalls. Such development approach, on both social economic and physical aspects, has been so effective in introducing a new system or organisation in the community. Such new physical input in the livestock facilities has fostered a positive outlook for the community in terms of building self-reliance for their livelihood matters.



Photos of the improved Kerio livestock market.  
An overall view (left side) and the new loading ramp (right side)

Livelihood  
Diversification

## 38. Selection of livelihood measures: need to consider socioeconomic conditions and categorisation of measures ~ planning aspect

### Summary:

- Livelihood measures are economic activities that are affected by socioeconomic conditions. It is important to analyse the socioeconomic conditions in selecting the livelihood measures.
- Livelihood measures can be categorised as 1) **livestock utilisation type**, 2) **local resources utilisation type**, and 3) **provision of necessary goods type**. It is useful to examine the relationship between socioeconomic conditions and categorisation for better selection of the livelihood measures.

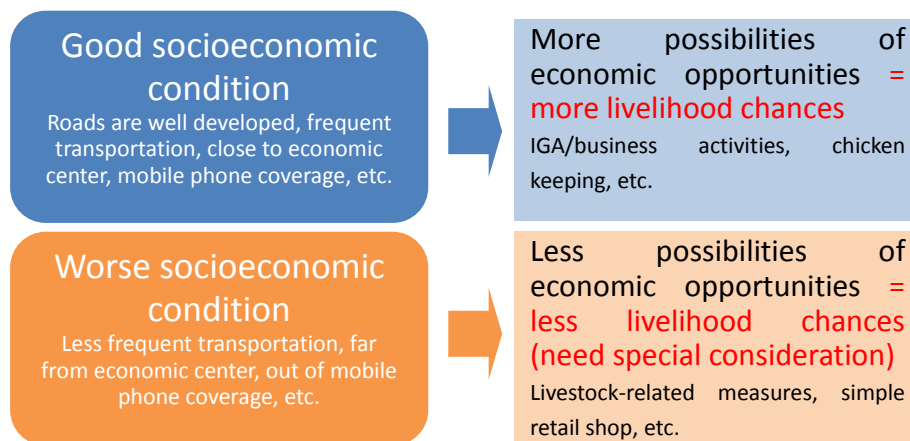
### **Socioeconomic conditions**

Livelihood measures are affected by the socioeconomic conditions in the surrounding areas. Livelihood activities are economic activities by nature, and this is true even for the pastoralists in Northern Kenya. These activities are normally regarded as different from economic-based life in other parts of the world. The socioeconomic condition in Northern Kenya is not relatively good compared with other parts of the country; however even within Northern Kenya, the conditions are diversified.

Therefore, it is important to examine first the socioeconomic condition of the country. Major items to be surveyed are as follows:

Road, transportation frequency, mobile phone coverage, nearest populated town and distance (as market areas), availability of local resource, current measure of livelihood, population of target area

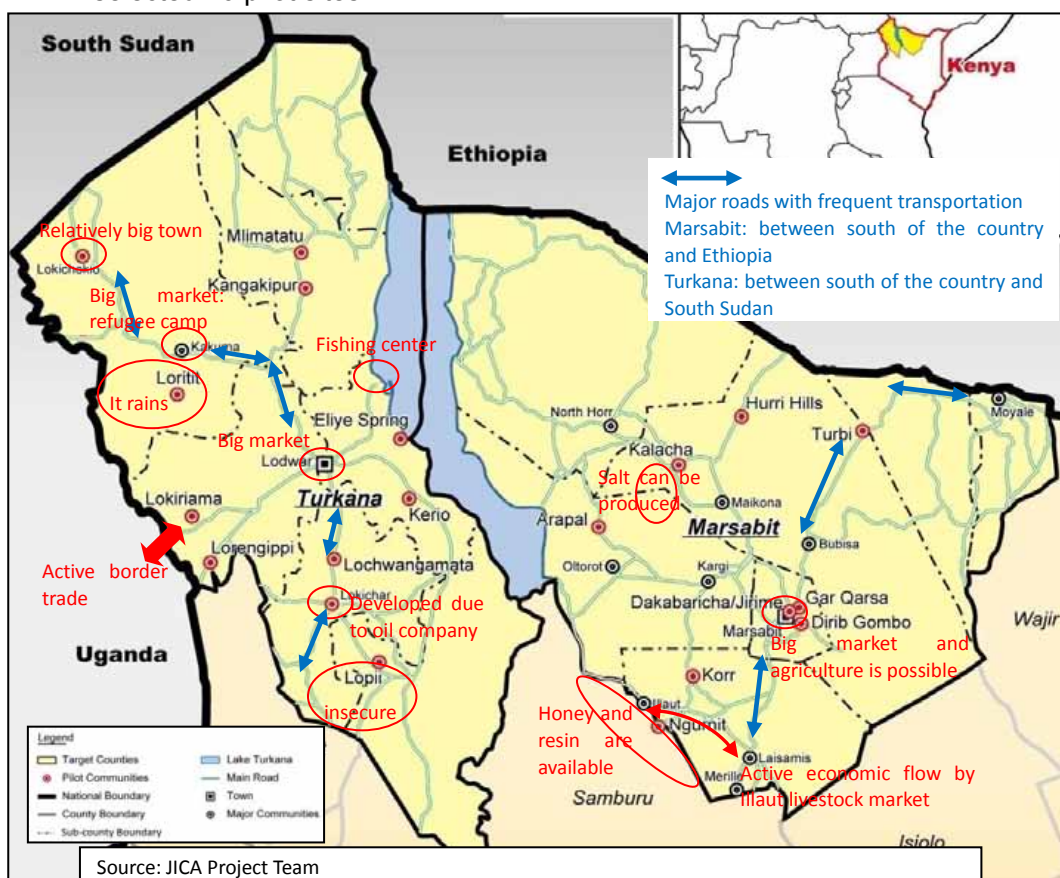
An image of how the socioeconomic condition affects livelihood opportunities is shown in the next page. In areas with good socioeconomic conditions, there are lots of economic opportunities, meaning that livelihood measures are more available. On the other hand, in places where socioeconomic conditions are worse, it may not be easy to diversify livelihood measures and careful selection of measures within the local capacity is needed from the viewpoint of sustainability.



Source: JICA Project Team

**Socioeconomic Conditions and Livelihood Measures**

Needless to say, lack of security affects economic activities so much because the community cannot easily move, leading to very few opportunities to mobilise resources. Such areas may not be recommended for selection as target areas for livelihood diversification in a short-term project. In the long run, establishment of secure areas is an indispensable element for economic activities. According to the ECoRAD experiences, the following map shows a rough image of the socioeconomic conditions in Turkana and Marsabit counties related to the selected 20 pilot sites.



Source: JICA Project Team

**Socioeconomic Conditions Related to ECoRAD in Turkana and Marsabit**

### **Categorisation of livelihood measures**

Livelihood measures can be categorised depending upon their contents. Based on the JICA Project Team experience, the categories of livelihood measures in Northern Kenya are proposed as follows: 1) **livestock utilisation**, 2) **local resources utilisation**, and 3) **provision of necessary goods**, although there are possibly more categories. The livestock utilisation measures use of livestock, which is relatively familiar to pastoralist (except chicken). The local resources utilisation measures include use of locally available natural resources that are sources of income. The provision of necessary goods measures are activities of providing goods needed for human consumption in the local areas.

### **Close linkage between socioeconomic condition and categorisation**

Depending on the socioeconomic conditions, livelihood measures differ from one place to another. Therefore, livelihood measures should not be introduced without examining the extent of socioeconomic condition which affects a particular livelihood measure.

Taking the subprojects as an example, the relationship between socioeconomic conditions and categorisation is shown in the table below.

**Categorisation of Livelihood Measures and Socioeconomic Conditions**

| Categorisation             | Livelihood Measures (tried in the subprojects) | Considerations on Socioeconomic Condition   |
|----------------------------|--|---|
| Livestock utilisation      | Chicken “merry-go-round”                       | Chicken is in demand basically in town. Pastoralist in the remote areas may not eat it.   |
|                            | Goat “merry-go-round”                          | Basically, this can be applied in places where goats are kept.  |
|                            | Processing of livestock product (dry meat)     | Basically, this can be applied in places where goats are kept:<br>If they want to sell the goats, proximity to town matters.                            |
|                            | IGA-livestock trading                          | Basically, this can be applied where the goats are kept.<br>However, places between areas with more pasture and towns with livestock market are better. |
| Local resource utilisation | Resin Honey                                    | Places where this resource is available, e.g., close to forest areas.   |
|                            | Salt   | Basically, only close to Chalbi Desert where this resource is available.  |
|                            | Small-scale rainfed agriculture                | For rainfed, at least some rain is expected such as in the west part of Turkana, even in Marsabit Town.<br>Or, agro-pastoralist zone                    |
|                            | Fishery  | Basically, only along Lake Turkana, but places near   |



## Part IV Lessons in Each Technical Area

| Categorisation               | Livelihood Measures (tried in the subprojects) | Considerations on Socioeconomic Condition   |
|------------------------------|--|---|
|                              |  | fish market places (= sending products to downstream) like Kalkol or fish market such as Lodwar (close to consumer places) are preferable.            |
| Provision of necessary goods | IGA – retail shop                              | Basically, any community where people live. Pay attention to population, proximity to town where goods are procured, and frequency of transportation. |

Source: JICA Project Team

It is recommended that measures should be chosen considering the above points for types and individual measures as per local conditions.

To enhance resilience in Northern Kenya, livelihood diversification is very important. It contributes to the enhancement of resilience by hedging risks and cushioning negative drought impacts as well as recovering early through on other livelihood measure besides their livestock keeping activity, or even through several measures (ultimately by money or food).

What kind of livelihood measures can be added or selected is always a question. Individual livelihood measures could be many even in Northern Kenya. Thus, it is important to understand the kinds of livelihood in a holistic way in order to make proper plans for livelihood diversification. Measure should not be limited to the ones tried in the ECoRAD Project. More measures that have potential in both Turkana and Marsabit are shown below;

Gum and resin, aloe, natural salt, honey, wild fruits, firewood, gold/precious stones mining, crashing stone for construction materials, fishery, small-scale agriculture, hay production, chicken, milk production, skins and hides, dry meat, weaving of mats and baskets, charcoal, alcohol, petty itinerant, kiosk-based trade, livestock trade

## 39. Inputs of assistance: need to reflect beneficiaries' capacity and cultural role ~ planning aspect

Summary:

- In designing the contents of livelihood assistance, the level of capacity and cultural role of beneficiary are important issues to be analysed.
- Capable community people can operate more livelihood measures with complicated contents, but less capable people can do few measures with simple transaction.
- Cultural role and the gender aspect on livelihood activities also need to be considered such as empowerment of women's capacity.

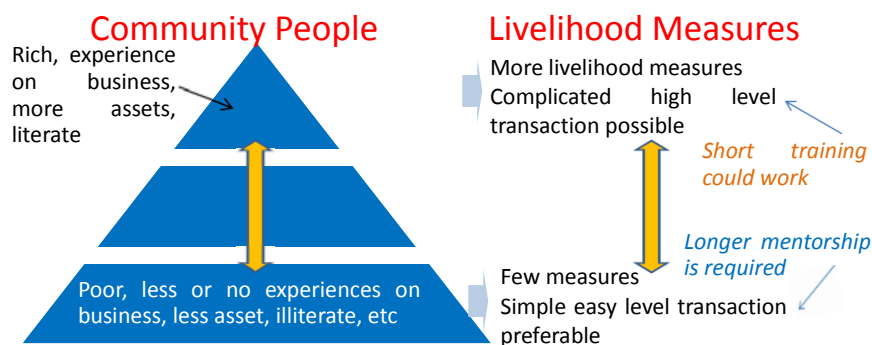
### Level of capacity of community people on livelihood activities

It is also important to know the level of capacity of community people on livelihood activities and to reflect this in the assistance activities. Below are the main items which should be studied.

Literacy, gender (male and female and their role in proposing livelihood measures), level of current livelihood measures, experiences of business

Best suited interventions and inputs must be proposed considering the level and kind of livelihood measures that can work for a certain capacity level of people with reference to social status and the form of assistance they need.

The following image shows how the level of capacity of community people affects the livelihood measures and their assistance.



Source: JICA Project Team

**Capacity of People and Livelihood Measures**

## Part IV Lessons in Each Technical Area

The JICA Project Team observed that there are really diversified community people even in the pastoralist community in Northern Kenya. There are some people who have experienced business in a good way mainly in semi- or settled areas; on the other hand, there are certain people who are illiterate and have not thought about money. The former can diversify more livelihood measures, but the latter can not. Relatively complicated business transaction can be handled by the former, but activities for the latter should be simple. In terms of the mode of assistance, short training or financial support is sufficient for the former, but long-term mentorship and interaction is required to build the capacity

Box

- Example of different 'takeaway' from business training

For income generating activities (IGA) retail shop group members in Turkana, the same business training was done. Interestingly, 'takeaway' from the training for the members in Lokiriama was much more than for the members of other areas.

This may be because the Lokiriama groups had past deep experiences on retail shops, therefore, they understood the basics of business, which made their learning so deep, although the other group members learnt simple business ideas depending on their capacities.



- Example of adoption based on different stages of capacity

A salt group in Marsabit had not started VICOBA even though the training was done. The reason was that VICOBA was a bit complicated and they wanted to concentrate on salt business first. As time went by, their salt business gradually became successful and the group members seemed to acquire more experience. Then, when the group money had grown, they started VICOBA using the said money. This indicated that they seemed to acquire capacity through salt business first, and then expanded their activities for VICOBA.



for the latter group. As such, it is important to analyse the capacity of people in shaping up the livelihood related assistance.

### **Cultural role and the gender aspect of livelihood activities**

The other point is that cultural role may affect the livelihood measures. For example; chicken has not been considered as fit for consumption from conventional pastoralist view. Thus, in remote areas where conventional thinking remains, chicken rearing may not be recommended (there is no market for eggs and meat, too).

In addition, small business activities are basically considered as roles of women. In the ECoRAD Project, most of the target group members are women for these small business activities as well as chicken rearing (although men were also included). If men are proactively targeted, things may not work properly. Such cultural role and gender aspects should also be fully accommodated although there are always exceptions.

## 40. A must aim: capacity development of beneficiaries ~ procedural aspect

### Summary:

- Unlike relief or humanitarian aid, capacity building is a must for livelihood diversification.
- Recommended procedures for self-reliance building are 1) **identification of livelihood measures**, 2) **participatory planning**, 3) **provision of initial training**, and 4) **provision of mentorship and ad hoc inputs**.
- Effective tools are 1) **exchange visits** and 2) **study (exposure) tours**.

### **Important basic understanding: capacity development**

Unlike relief or humanitarian aid, capacity building of community people is a must for livelihood diversification because livelihood measures are managed by them even after the assistance is over. If introduced measures could not be handled sustainably by the community people, they could not get benefits indicating that resilience is not enhanced. Therefore, it is basically inappropriate to just give handouts unless the capacity of the target people is high. Unfortunately, it seems that community people, especially in Turkana, have gotten used to receiving relief type of aid at present; hence, people tend to require immediate grant or handout, regardless of their capacity. To strengthen the capacity of community people, persistent long-term encouragement is indispensable for livelihood diversification.

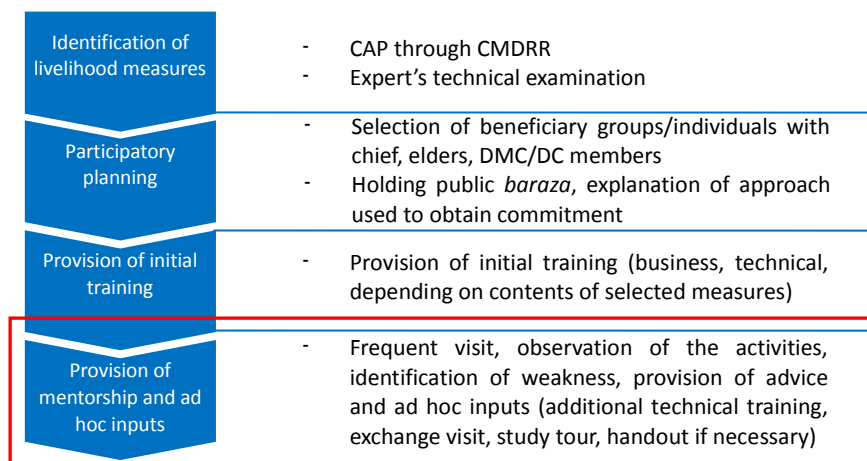
### **Recommended procedure of livelihood projects to build self-reliance**

Based on the JICA Project Team experience, the recommended procedure to promote self-reliance building is shown in the figure in the next page.

The first step is the identification of livelihood measures. Contents of community action plan CAP through CMDRR approach, if it is available or formulated, can be checked to know whether livelihood related plan is included or not. Technical examination through site visit by livelihood

## Part IV Lessons in Each Technical Area

experts is also needed to identify viable technical livelihood measures considering the abovementioned issues such as socioeconomic conditions and capacity of community people. Comprehensive examination of both results is desirable to come up with an idea of the livelihood measures.



Source: JICA Project Team

*Important!*

### Recommended Procedure of Livelihood Projects

Second step is participatory planning once the idea of livelihood measures to be assisted is identified.

Third step is the provision of initial training. Depending upon the contents of selected livelihood measures, either business or technical training (or both) is provided.

Fourth step is the provision of mentorship and ad hoc inputs. This step is critical and crucial to build self-reliance. After provision of initial training, their activities are monitored and observed through frequent and regular visits. Once a weakness is identified, advice or necessary additional training can be done. Effective tools (shown below) can be introduced at this step based on the observation. Here, handout can also be given as long as commitment of the people is confirmed and growth by this input is judged to be expected.

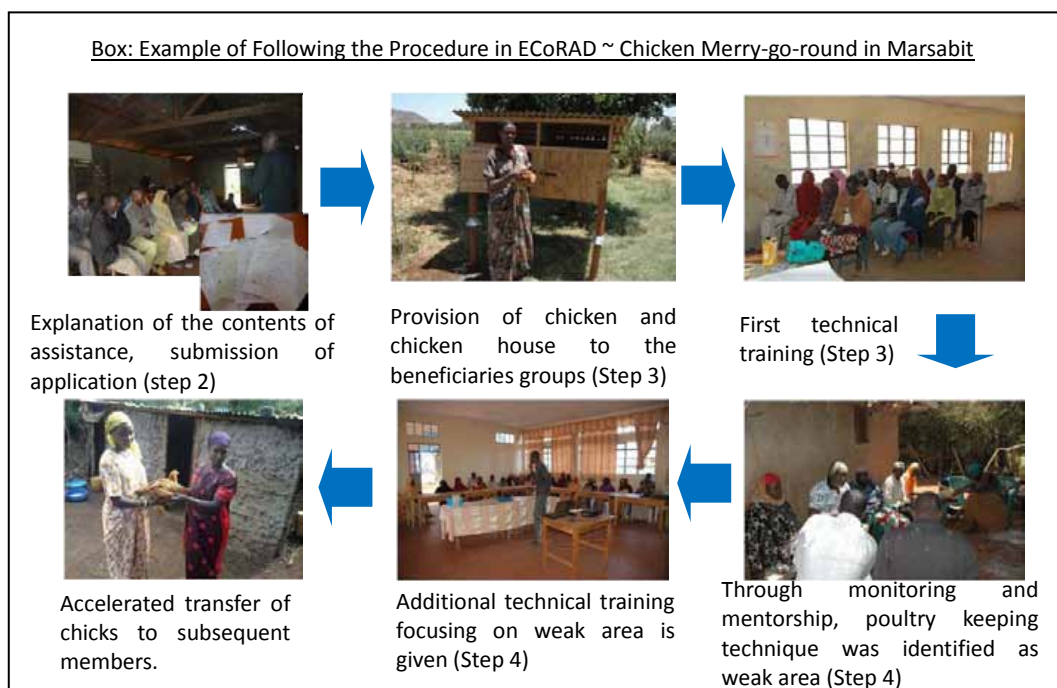
The above steps are indicative, and may not be exactly followed. As long as the concepts behind the procedure are understood, any modification is possible. Important concepts behind this are 1) participatory community engaged in decision making on selection of both livelihood measures and beneficiaries together with the involvement of experts from technical point of view, 2) possible aftercare with additional inputs as required, and 3)

“

*Fourth step is the provision of mentorship and ad hoc inputs. This step is critical and crucial to build self-reliance.*

## Part IV Lessons in Each Technical Area

fostering self-reliant attitude of community people as catalyst by means of outsiders' position.



### Effective tools

Mentorship activities (fourth step) are really important and effective.

Throughout the projects/programs, activities of the communities are monitored; their weakness is identified, if any; necessary advice based on the knowledge from the training is given; additional ad hoc inputs such as additional training on weak areas, exchange visit, and study tour can also be provided. In this step, the following tools are particularly effective:

#### Exchange visits (one element of Pastoralist Field School)

It is effective to conduct inter-group meetings among the groups on same assistance project/program, or even similar programs under other initiatives to learn from each other (good practice of the same activity in the same region). This will provide learning opportunities among themselves (teachers are community people, and learners are community people, too).

#### Study (exposure) tours

People in the communities of Northern Kenya have very little opportunity for exposure on advanced cases related to livelihood measures. To provide incentive or motivation, or even learn technical things, it is

“

*Mentorship activities (fourth step) are really important and effective. In this step, the following tools are particularly effective.*

- Exchange visit
- Study (Exposure) tour

## Part IV Lessons in Each Technical Area

effective to take groups to show advanced cases.

### Box: Example of Tools Used in ECoRAD

#### Exchange Visit – Goat Women Group in Marsabit



As one of the capacity development measures, two women groups were taken to advanced women groups (which are not in the goat program) to get motivated.

Members were motivated to accelerate VICOBA and monthly contribution.

#### Exchange Visit – IGA (retail shop) groups in Turkana



To give an opportunity to learn their business activities between themselves and use the opportunity to improve their own business activities, one group visited another group in different places.

One group (host) is better off than the other visitor group and the latter had a lot to learn from the former.

#### Study Tour – Honey Groups in Marsabit



The groups were taken to Kerio Valley Development Authority to see the advanced honey transaction.

Some technical learning and means of motivation for using new containers.

#### Study Tour – Fisher Groups in Turkana



To learn how advanced the area where fishery is active and give an opportunity to get some ideas for the improvement of their fishery activities, the groups were taken to Kalokol.

Some members have started going to Kalokol and do commission fishing learnt from the tour

## 41. Contents of assistance: need for customisation based on kinds of livelihood measures ~ technical aspect

Summary:

- Required trainings, mainly technical training and business training, are different depending upon the kind of livelihood measures.

### Different knowledge required

Depending on the contents of the livelihood measures, the required knowledge is different. Therefore, it is important to customise and provide the required trainings and mentorship activities based on the livelihood measures to be assisted. The following table shows the required trainings depending upon the kinds of livelihood measures.

**Required Trainings Depending Upon the Kinds of Livelihood Measures**

| Example of Livelihood Measures  | Required Trainings   |
|---|--|
| <p><b>Measures that require skills</b> including chicken, goat, dry meat, agriculture, fishery, honey (when sieving technique is required), and more.</p>                                       | <p><u>Technical trainings in each area</u><br/>Poultry keeping, improved technique of dry meat, farming/fishery practices, honey sieving</p> |
| <p><b>Measures that intend to sell products and get profit</b> such as retail shop, livestock trade, salt business, honey business, and any other measures which involve business elements.</p> | <p><u>Business/entrepreneurship training</u><br/>Cost and benefit, market, risk, business planning</p>                                       |

Source: JICA Project Team

Livelihood measures that require technical skills need technical training. On the other hand, measures that may not need specific technical knowledge but are more related to sales of products demand business/entrepreneurship training. There are measures which often need both elements (e.g., measures producing technical products and earning profit by sales). According to the project's focus, the points to be emphasised must be analysed, and the necessary inputs should be decided.



## 42. Technical considerations from ECoRAD experiences ~ technical aspect

Summary:

- Technical consideration is different from one measure to another. It needs careful observation.

### Technical consideration based on the ECoRAD experiences

Technical considerations are different from one measure to another, therefore lessons obtained from the ECoRAD experiences may not be generalised for all other institutions. However, at least when similar livelihood measures are to be selected for assistance, the lessons learnt will be useful. Hence, lessons from three livelihood measures are noted.

#### Chicken “merry-go-round”

The subproject provided chicken (mainly improved breed, Sasso) to a group. The first recipients who received the chicken kept them and let some to hatch eggs to increase their numbers; then, the newly hatched chicks are given to another member. Chickens are distributed until all members of the group get their chicken.

As most members were experiencing technical difficulty of rearing improved breed of chicken, progress of the project was slower than planned. Some of the major technical difficulties they suffered were:

- Chick mortality due to night and morning colds in Marsabit Central;
- Issue of hygiene like cleaning of poultry houses which could bring recurrence of infectious diseases;
- High feeding costs for rearing improved breed; and
- Frequent diseases occurrences and unavailable of medication



**Multiplied Chick and Transfer**

On the other hand, if members could be patient to acquire all techniques, this improved breed produces huge income. In fact, some individuals

## Part IV Lessons in Each Technical Area

acquired substantial skills in poultry rearing and were seriously taking the activity as a source of livelihood. Therefore, lessons learnt are; to emphasise individual chicken rearing more than the group system, and to give frequent advice on the specific technique identified as above until they fully acquired the skill. As to the chicken itself, the improved breed is promising as a livelihood measure because it has a high demand in Marsabit Town. However, it should be noted that this improved breed may not be needed in the remote area where the population is low, meaning that demand for poultry products is low.

### Goat “merry-go-round”

Similar to the subproject of chicken, this subproject aimed at providing goats to target groups; increase numbers of goats; and share the offspring with group members. Under this subproject, Galla goat was used as the improved breed which is famous for producing substantial amount of milk under extensive grazing system, and is said to survive better in the Kenyan arid and semi-arid areas.

Unfortunately, multiplication of Galla goats was very low and the system was not fully operational as planned in terms of speed. Since the concept itself was positively evaluated by members, only the performance of this goat breed was an issue. There were continuous reports of frequent abortions among pregnant Galla goats. This could have been as a result of disease outbreaks, weak Galla goats brought in the project, and/or poor care provided by the members possibly because it was a free gift. Its important to note that Galla goat may not be suitable in the cold areas like Gar Qarsa.

Lack of necessary vaccinations and medication together as well as veterinary personnel in the target areas (groups) hampered the acceleration and multiplication of kids.



**Provision of Galla Goats and Distribution of Female Kids**

## Part IV Lessons in Each Technical Area

One of the technical lessons is that the condition of the breed and/or individual goat should be carefully observed before provision and only healthier ones should be distributed (local goats which can perform better in the cold area are also options other than improved breed). Government extension services are also important. Veterinary personnel and modern agricultural laboratories for disease diagnosis are recommended to be put in place by county government as countermeasures against the outbreak of disease(s).

### Small-scale rain-fed agriculture

This subproject was meant to assist target groups to conduct small-scale rain-fed agriculture in their localities by taking advantage of the rainy season. The Project provided agricultural technical training and technical advice and hands-on learning on farming practices expected to be employed in individual farms. Major technical learning by the members was mainly on line planting whose benefits include not only incremental production but also easy farming practices (easy movement inside the field, flood water can easily flow through the field without affecting plants). For places where rain-fed agriculture is still conducted in a primitive way like in Turkana, this line planting technique has not yet been fully applied and is useful.



**Difference between Line Planting and Broadcasting in Experimental Plot**

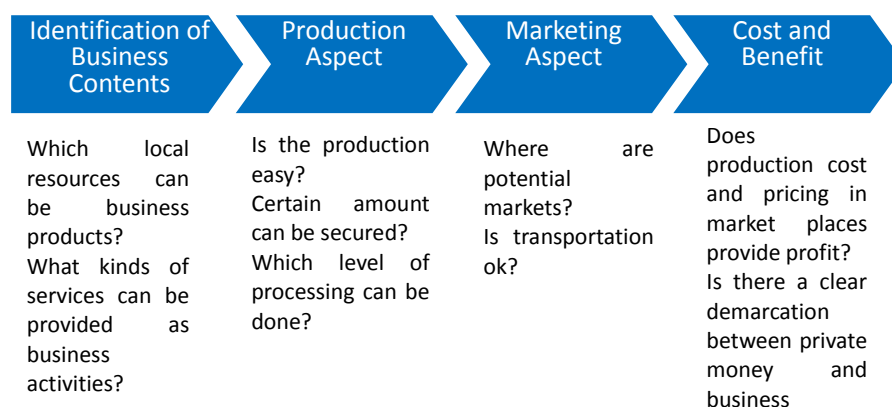
### 43. Business-related lessons: aspects of identification, production, market, and cost and benefits ~ technical aspect

Summary:

- Business-related lessons can be relatively and easily generalised. It is important to apply the simple business framework (**identification, production, market, and cost and benefit**) to analyse the weakness and give mentorship to the weak area.

#### Consideration of business-related livelihood measures

Unlike the above technical considerations, business-related lessons can be easily generalised in order for other institutions to use them. In planning on how to assist the business activities and provide mentorship, the following framework should be taken into consideration.



Source: JICA Project Team

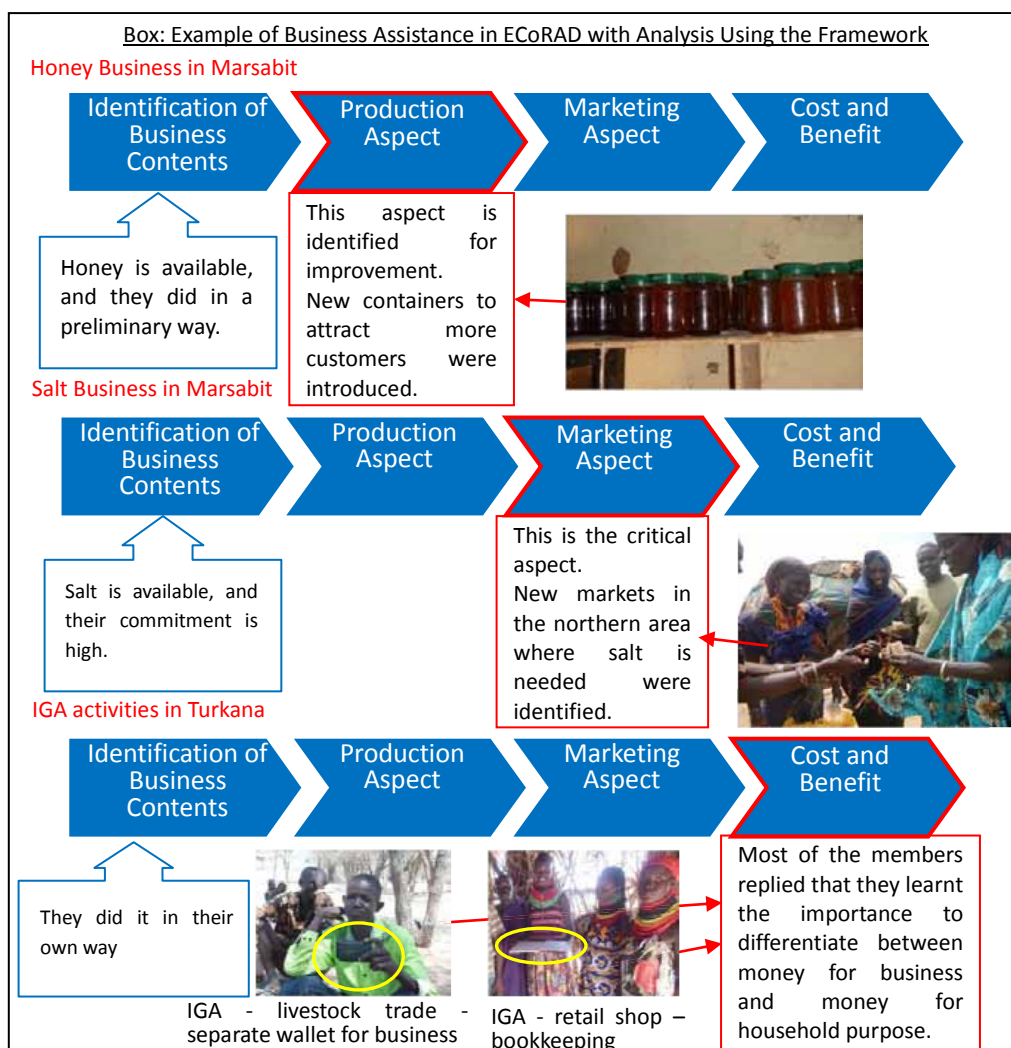
#### Framework of Business Activities

The first point in the framework is identification of business contents to be assisted. The points which have already been discussed earlier, such as capacity of community people, socioeconomic conditions in and around the areas, and availability of local resources are important in order to identify business contents.

The second, third, and fourth points are important aspects of business activities. Once business contents are identified, these three points should be analysed; and weakness, which is expected to be improved, must be examined within the local context. Once weakness is identified,

## Part IV Lessons in Each Technical Area

assistance can be concentrated on such weakness. Through mentorship activities, the cycle to improve business activities using this framework (identification of points needed to be improved -> inputs -> monitoring and observation -> identification of weakness where further improvement is needed -> additional input) is recommended.



Most importantly, all aspects in the business cycle should be experienced by the members within the assistance period, which leads to sustainability of their business activities. For example, in the salt business assisted by ECoRAD in Marsabit, the target group experienced all the aspects in the business cycle from collection of salt to market delivery and collection of sales (money). Before the ECoRAD assistance, they could not imagine where the potential markets are and how to transport salt bags. Once the

## *Part IV Lessons in Each Technical Area*

JICA Project Team showed them the identified markets, and how to use locally available lorry to carry salt bags to markets, they were able to do all the aspects of the business cycle by themselves. However, if an institution just provides equipment which only an outsider can operate and repair, their business activities may be active only during the particular period of assistance and will end up once the institution is gone. This situation should be avoided in the project/program design.

New technology also helps in their business activities. Remarkably, they have already used to mobile phones to get market information. Several members of IGA (livestock trade) and fishery groups said that they used their mobile phones to get market information. The mobile phones are not provided by the project but came from their own pockets/initiatives. In this sense, mobile phone coverage expansion in Northern Kenya seems to contribute greatly in their economic activities.



## 44. Other issues: handout provision and other impacts ~ technical aspect

### Summary:

- Provision is acceptable or even effective as long as ownership of handouts is secured; and provided handouts are positively used by people to lift their current level of livelihood activities a little bit upward.
- Through this assistance, the enhancement of group cohesion and gender/youth consideration are expected.

### **Handout provision**

As discussed earlier, provision of handout itself is not a bad option and even ECoRAD provided chicken, chicken houses, and goats to the community people. Generally however, ECoRAD tried to provide less or no handouts and grant (money) and emphasised on the provision of knowledge and capacity development. An important concept behind this is that provision is acceptable or even effective as long as ownership of handouts is secured and provided handouts are positively used by them to lift their current level of livelihood activities a little bit upward. Well-designed provision together with mentorship and training activities is good. However, it is not desirable that handouts foster just dependency and lose the community people's self-reliant attitude. In Northern Kenya, dependency has already prevailed perhaps due to past relief aid. Livelihood activities need the community's efforts because they are economic activities. Economic situation is always changing. Only people who proactively think and behave can successfully continue their livelihood activities over time. For successful livelihood activities, building self-reliant attitude in community people is indeed indispensable. In this regard, harmonisation of the approach is required among institutions related to assistance (e.g., prohibiting easy handout provision).

### **Other positive impacts expected**

Through the ECoRAD experiences, the following are seen as other positive impacts:

### Group cohesion

Most of the members evaluated group cohesion positively through group work. For the goat subproject, although goat transfer is at low pace, group cohesion was enhanced. Also, some members of business-related subprojects started to understand good points of group work such as collective action and VICOBA. Basically, pastoralists are independent; therefore, group work cannot be expected much. However, the JICA Project Team could say that groups do function for relatively smaller groups i.e. around 20~30 members who have the same economic interest. However, careful thought on group issues while designing the contents of the livelihood measures is still needed. In particular, it is recommended that benefit and profit are basically designed for individuals rather than for a group. Group mechanism can work for assisting and helping each other, e.g., for cases where collective action is required (joint procurement) and for fundraising (VICOBA/"merry-go-round").

### Gender and youth

As argued earlier, livelihood activities in most cases are handled by women. Through the ECoRAD assistance, women have been empowered through ownership of chicken/goat and involvement in decision making on the given assets. They have also been empowered by economic success of business activities. Thus, livelihood assistance contributes to gender issues if women are selected as beneficiaries of livelihood assistance and given something such as ownership and small success (e.g., earning money).

Youths who are educated tend to do IGA business activities. In Turkana, youth groups conduct livestock trade. They might take more risks and try new things. Youths are also assisted through livelihood assistance.

#### Ownership of Goats by Women ~ ECoRAD Experience

In Northern Kenya communities, ownership of livestock is mainly by men. By giving women goats in the project through goat merry-go round program was a major milestone. In this sense, women members have felt the ownership of the goats as well as having a say on enjoyment of their benefits like milk. Men appreciate importance of the project by allowing their women to participate in it since benefits are shared by them as well.





## 45. Fundraising for community people: start within current capacity ~ technical aspect

### Summary:

- Stage-wise approach is important as well in terms of fundraising for livelihood measures. At the initial stage, livelihood measures must be planned at a level which the community people can handle. At later stage, it can be considered to increase the capital gradually.
- As forms of fund raising, “merry-go-round” and VICOBA are good tools for the initial stage. Applying to existing fund institutions is one way for the later stage.
- **Drought Fund** Kitty can be one of the ideas at the group level to be used for cushioning negative impact by future drought.

### **General recommendation**

To start and continue the livelihood activities, funds are required. However, in most cases, community people in Northern Kenya do not have much fund for both initial and operational investment. At the same time, it should also be considered that community people may not have enough experiences in managing money matters because pastoralism does not require money in the general sense. Below are the recommendations.

At the initial stage, livelihood measures must be planned at the level which the community people can handle within their current capital.

Although the amount is low, at least community people who do livelihood activities have some money. And some have already started small business with their money. When a certain measure is assisted, activities must be set at a level where they can start and operate without relying significantly on new inputs.

At a later stage when their activities become stable, it can be considered to expand their business gradually as their capacity and capital grow, but not abruptly. Because they get used to the current operation and fund management, failure in the usage of money is expected to be minimal.

As discussed before, if the capacity of the community people is judged to be high enough, measures which require certain amount of money can also be considered.

### **Fundraising**

Next issue is how to raise funds. In general, there are few financial institutions in Northern Kenya. Accessing the fund is not easy for the community people. The following two ways are possible:

#### **“Merry-go-round” and VICOBA**

A way to raise the fund where there are no financial institutions is to collect money from community people within their proximity. There are very good tools for this purpose, namely, Merry-Go-Round (grant) and Village Community Banking (VICOBA) (loan), which are measures of fund raising in a group.

“Merry-go-round” is a first good step to start. In fact, “merry-go-round” is widely implemented in Northern Kenya, which is a system where group members contribute money and give it to another member as grant.

The purpose is mainly for some social occasions or some sudden events where a particular member needs some money. This can also be used as a capital for their livelihood activities.

VICOBA is a further developed form of “merry-go-round”. Under VICOBA system, a group lends contributed money to a member, and a member must return the money with interest within a certain period of time. This is actually a kind of self-operated bank and considered a good financial source. However, it must be noted that VICOBA has pros and cons for its introduction as summarised in the table below.

**Pros and Cons of VICOBA**

| Pros  | Cons   |
|---|--|
| <ul style="list-style-type: none"> <li>● As long as the community people understand, it is good to raise fund and increase group money in remote area such as Northern Kenya.</li> <li>● Members can access both initial and operational fund easily. Ownership increases because of the members’ money.</li> </ul> | <ul style="list-style-type: none"> <li>● This is a loan, therefore not so high interest rate and short repayment period are recommended.</li> <li>● Calculation is complicated, sometimes the community people cannot understand.</li> <li>● VICOBA can be introduced together with some kind of IGA (only money without explanation on how it could be used would not work).</li> </ul> |

Source: JICA Project Team

These two tools require the formation of group and group collective action. Strong groups tend to be successful.

#### **Linking to existing fund schemes**

Another way is to link the community people to existing institutions, which provide fund schemes and consider sustainable rather than time-bound projects, for applying fund. They normally do not possess information on



*A way to raise the fund where there are no financial institutions is to collect money from community people within their proximity. There are very good tools for this purpose: Merry Go-round (grant) and VICOBA (Village Community Banking which is loan).*

which institutions can disburse funds; therefore, information dissemination to remote area is also important by the facilitators. Candidate schemes are Constituency Development Fund (CDF), Women Development Fund (WDF), Youth Fund (YF), or even formal banking if they can manage. There may be other drought-related specific funds available or to be established. Most of these schemes require group application. Forming groups is a prerequisite.

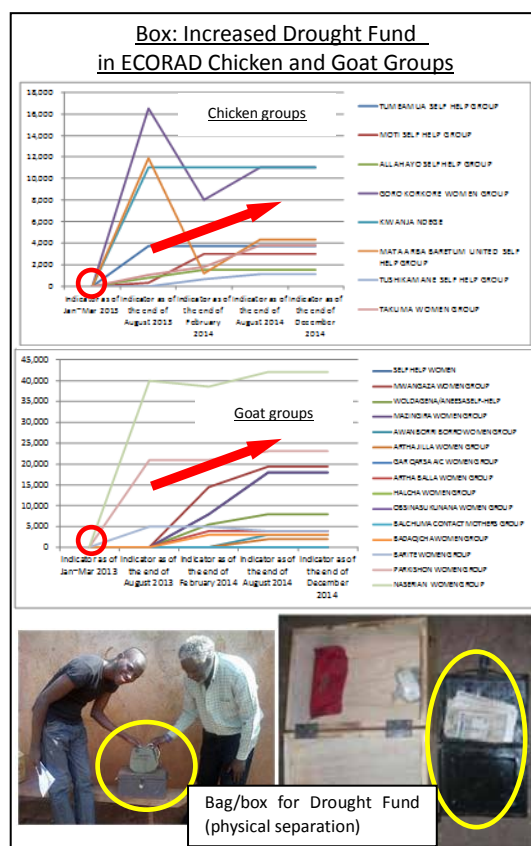
**Input by projects/programs**

Once their commitment is confirmed, projects/programs could provide grant or loan. This has been already discussed several times earlier, it is not a good idea, to just provide grant without confirming their commitment and ownership, and mentorship activities, possibly leading to foster dependency.

**Drought Fund**

One of the trials that ECoRAD did is to establish Drought Fund Kitty especially in Marsabit. This Drought Fund intended that some amount of money be saved in the group's savings account/box to prepare for the negative impact of future drought. For chicken and goat "merry-go-round" subprojects, usage of Drought Fund was planned to buy the initial set of chicken and goat to restart the "merry-go-round" cycle again. Currently, at least some money (several

thousands to more than ten thousand shillings) is saved and kept aside for future drought. Technically, physical bag/box only for this purpose is recommended to be used because money does not have color and easily misused. This could also be saved in the same group fund box promoted



## Part IV Lessons in Each Technical Area

by VICOBA (with three keys which are kept by different members).

According to general pastoralists' mindset, it is said that they do not understand money without concrete purpose of usage; and may not have a clear image of future events. Thus, this trial was a challenge in order to create new culture in them. Based on the results of the end-line survey, the members seemed to understand the purpose of Drought Fund properly (they said "this money is used when future drought occurs and when the groups suffer from it"). Since the subprojects started, no severe drought has occurred, and therefore it is early to judge whether this Drought Fund works. However, such saving culture should be fostered and promoted in Northern Kenya as one of the ways to enhance resilience; therefore, the JICA Project Team recommended and introduced Drought Fund for small livelihood groups taking the long-term perspective into consideration.

### Gender Aspect: Empowerment of Women by Fundraising in the Project

Since men have ownership of livestock, trading business of livestock is one of men's main roles in pastoral culture. By this, women in Northern Kenya used to have less opportunity to have transaction with external society. Recently, small income generating activities have been exercised by women. Due to the introduction of fundraising activity by the project, the target women were able to have cash in hands which could be used in their own decisions. With such cash, some women's groups strengthened their relations e.g. for mutual support, and some were empowered together with enhanced their business capacity.

- Fund for social safety net: Because of the actual practice of the activities, especially the groups in Kalacha and Arapal seemed to have more cohesive actions than before. The groups had a social fund that could be used in terms of emergencies. In Arapal, the members contributed money if one of the members gave birth and the same applies if a member lost a relative. In Kalacha, the groups had social fund meant to cater for the welfare of the group members.
- Group empowerment: Some groups have started their business inspired by the mentoring and group strengthening activities by the project. The Naserian women group had bought goods and the goods were later divided among the group members so that they can sell on behalf of the group.



Capacity  
Development  
of Government  
officers

## 46. Necessity of capacity development of the county government officers

Summary:

- It is important to develop capacity of county government officers on elaborated CMDRR approach, development planning, and technical lessons.
- Government officers who need training are administrators (Sub county, Ward, and Village) and officers in related technical ministries.
- It is desirable that officers are trained to think by themselves and be able to customize approaches fitted to local conditions rather than just apply standardised approaches.

### **Necessity to develop capacity of the county government officers**

The ECoRAD project conducted the on-the-job training in implementation of the sub projects, the CMDRR trainings, and several seminars and workshops as the activities of this component. As the result of the devolution, the county government is now responsible for development in the county. Since the process of the devolution started after the project had begun, the project was not able to fully involve the county government staff. Even at the time of preparing this guideline, the county structure has been yet fully established. Furthermore, since some of newly recruited county government officers do not have enough experiences and knowledge for working with community, they need basic trainings in order to be good facilitators for communities. Therefore, there is a strong need that the county government officers be trained further to enhance community resilience against drought in Northern Kenya.

### **Necessary fields and subject officers for capacity development**

Necessary fields of the trainings are the issues shown in this guideline, namely 1) basic understanding on drought, drought resilience, and community, 2) lessons for better community-based drought management including general and specific topics, e.g. elaborated CMDRR approach and development planning, and 3) lessons in each technical area. Subject officers of these trainings are administrators (Sub county, Ward,

## Part IV Lessons in Each Technical Area

and Village) and officers of related technical ministries. Administrators are important because they are the ones working with the community people day-to-day basis, especially from the viewpoint of community resilience. Training to the technical officers of technical ministries is also necessary because basic understanding of the general pastoralist world and how to deal with it are must knowledge when they provide technical assistance the communities.

### **Importance to build self-reliant capacities of the county officers**

Unlike the other part of Kenya, there are lots of relief and development assistances, which have different characteristics by nature. And these assistances often use standardised approaches. Officers who handle these assistances effectively and efficiently are the county government officers. Therefore, it is desirable that officers are trained to think by themselves and be able to customize approaches fitted to local conditions rather than just apply standardised approaches.





