



WORLD BANK GROUP



**Zoonjezera 5 zaperekedwa komaliza kwa gawo II.** Zoonjezerazi ndi izi:

- Zoonjezera I: m'gwirizano (kuteteza nkhalango)
- Zoonjezera 2: Makomiti a kumudzi osamalira zinthu zachilengedwe ndi malo
- Zoonjezera 3: mapulani a kudera otetezera ngozi zogwa mwadzidzidzi.
- Zoonjezera 4: kafukufuku wa moto olusa ndi katetezedwe
- Zoonjezera 5: kasankhidwe ka mitengo yofunika.

#### **4. Mau omaliza**

Magawo onse a zotsogolera zotetezera malo mogwirizana ndi zomangamanga za kumudzi ndi zinthu zofunika kugwiritsa ntchito yosamalira malo m'dziko muno. Gawo I likunena za ntchito yeniyeni ya luso kwa onse okhudzidwa poteteza malo, kuphatikizapo akuluakulu opereka upangiri wapamwamba ku mabungwe osiyanasiyana. Gawo limeneli likuonetetsa kuti zolinga zenizeni zosamalira malo zikufotokozedwa m'mapulani pa mudzi. Gawo II likukamba ntchito yeniyeni yogwira ndi manja kwa onse okhudziwa monga magulu a pa mudzi amene akufuna kuti miyoyo yawo isinthe. Zotsogolera za munthu payekha zafotokozedwa mwatsatanetsatane pogwira ntchito zosiyanasiyana zosamalira malo ndi kagwiritsidwe ntchito koyenera ka zinthu za chilengedwe. Palonso zotsogolera za mowe anthu akudera angachite pokonza mapulani osamalira malo ndikupereka mapulani amenewa kwa akuluakulu pa zonse zokhudza njira zosamalira malo.

Magawo awiri osiyanasiyana amenewa amakonzedwa kuti azigwiritsidwa ntchito limodzi ndi anthu onse okhudzidwa pa nkhani ya malo pofuna kuteteza malo omwe alipo ndikuonetsetsa kuti malo akupitirira kupereka thandizo loyenera ku m'badwo wa mtsogolo.

Zotsogolera ndi nkhani zina zokhudza kasamalidwe ka malo zikupezeka pa tsamba la makina a kompyuta ili: <http://www.catchmentguidelines.org.mw>

## **MALAWI NATIONAL GUIDELINES: INTEGRATED CATCHMENT MANAGEMENT AND RURAL INFRASTRUCTURE**

**( KUSAMALIRA MALO NDI ZOMANGAMANGA  
KU MIDZI MOGWIRIZANA )**



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**Volume I and II**

## 1. Introduction

Misuse of land through unsustainable, inappropriate land uses or agricultural practices are negatively impacting on drinking, irrigation water and land productivity used by local and downstream communities. These negative impacts cannot easily be managed and only by working together and planning can efforts be focused on solutions to correct these practices that cause the problems. This type of planning applies to all sizes of catchment areas and requires the involvement for everyone from the individual land users, to traditional authorities and district and national ministries. It is against this background that, the National Guidelines were developed in consultation with many different stakeholders within the Malawi Government, Shire River Basin Management Program and stakeholders throughout Malawi, and represent a substantial collaborative effort.

These guidelines address the environmental issues identified in Malawi's National Environmental Action Plan (NEAP) which are: soil erosion, deforestation, water resources degradation and depletion, threat to fish resources, threat to biodiversity, human habitat degradation, high population growth, air pollution and climate change. However the underlying causes of population growth and poverty require greater governmental input, policy and regulation than the scope of these guidelines. The issue of uncontrolled population growth needs to be addressed in order to prevent a major disaster, and for Malawi to reach a point of sustainable utilisation of its natural resource base and the achievement of its constitutional responsibility in terms of section 13(d) of the NEAP.

These Guidelines have been drawn up, and consist of two separate Volumes, which work together to provide the full picture of catchment management:

**VOLUME 1:** introduces catchment management principles, the need for catchment management, the institutions involved in catchment management and the catchment management planning process. It also contains more procedural-type guidelines that contribute towards the planning, implementation and sustainable management of catchments at large (**Theory and Procedural Guidelines**)

Volume II: contains the technical activity guidelines targeted at village level communities. These guidelines are the “bare bones” basic guidelines for practical catchment management at the village and community level (**Toolbox**)

madzi, kusunga madzi ochepa, madamu ang'onang'ono, kusefa, ndi ulimi othirira pa malo ochepa.

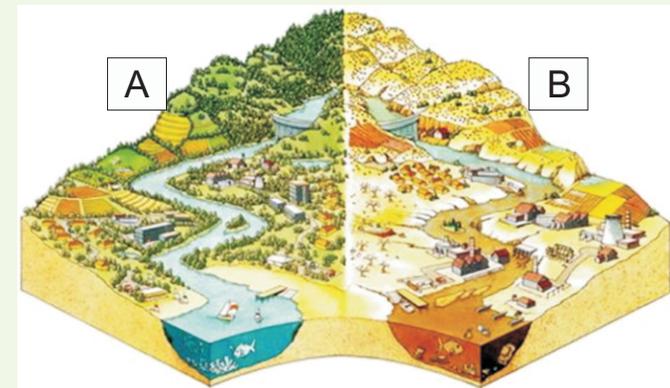
### **Ndime 7: Kasamalidwe ka munda**

Zolinga ziwiri zing'onozing'ono zafotokozedwa mu ndime imeneyi: kasamalidwe ka munda ndi za ukhondo.

Zotsogolera zokhudza kasamalidwe ka munda kakusonyeza popanga mipanda yokhazikika ndi zotchinga mphepo kuchokera ku mitengo ndi momwe mungakonzere manazale a mitengo pofuna kupeza mitengo yokonzera zinthuzi komanso ntchito yobzalanso mitengo. Pali malangizo a momwe mungasamalire ndi kukonzanso mapaipi a mijigo, ndi njira zamakono zosungira chimanga. Zotsogolera zokhudza ukhondo zikuphatikiza njira zomangira zimbudzi ndi momwe malangizo a momwe mungakwilirire chimbudzi chodzadza.

### **Ndime 8: kasamalidwe ka zachilengedwe**

Magawo 6 a ndime imeneyi ndi : Nkhalango, usodzi, madambo, kusamala zomera, magetsi, ndi kusamala zinyalala.



*Malo abwino (A) ndi oyipa (B) pakagwiritsidwe ntchito*

### **Ndime 9: kuteteza ngozi zogwa mwadzidzidzi**

Kuteteza moto olusa, umoyo ndi kuthandiza ngozi mofulumira ndi zolinga zing'onozing'ono zitatu zomwe zalembedwa mu gawo limeneli.

chofuna kukolola zochuluka.

**Gawo II** likuyamba ndi chiyambi cha ntchito zofanana ndi zomwe zili mu sekishoni I ya ntchito zazikulu. Dongosolo ndi fundo zosamalira malo zafotokozedwa mu ndime 2 zofanana ndi zomwe zili mu gawo I.

Fundo zimenezi ndi monga:-

- Njira zosiyanasiyana za kasamalidwe ka malo zomwe zingagwiridwe kuchokera ku malo akulu aliwonse mpaka kufika ku madera ozungulira mtsinje.
- Fundo zosamalira malo limodzi
- Kukhazikika ndi kagwiritsidwe ntchito koyenera.

Mapulani osamalira malo a pa mudzi zafotokozedwa mu ndime 3. Dongosolo ndi cholinga cha pulani yosamalira malo ya pa mudzi ndiyofuna kupatsa mphamvu anthu a pa mudzi kukonza zoyenera kuchita ndikutenga nawo mbali pogwiritsa ntchito moyenera zinthu za chilengedwe makamaka madzi.

**Zotsogolera pokhazikitsa magulu a ku kumudzi osunga ndi kubwereketsa ndalama zanenedwa mu ndime 4.** Magulu amenewa akuthandiza kwambiri pa chitukuko cha anthu a kumudzi chifukwa anthu akumudzi ali ndi mwayi obwereka ndalama zogwiritsira ntchito pa mabizinesi awo.

Popeza kuti ntchito ya ulimi ndiyoyendera nyengo kapena kuti ya pakanthawi, anthuwa sakhala ndi ndalama zokwanira nthawi zina za pa chaka kapena zaka.

**NDIME 5: Kuteteza nthaka ndi madzi kapena njira zotetezera kukokoloka kwa nthaka**

Zolinga zing'onozing'ono 7 zagawidwa m'magulu mu ndime imeneyi zomwe ndi: Ulimi wa mleranthaka, kasamalidwe ka malo opezeka nyama, kasamalidwe ka chonde, njira zotetezera kukokoloka kwa nthaka ndi madzi othamanga, kasamalidwe ka ngalande zogumukira, kasamalidwe ka nthaka ya m'mphepete mwa mitsinje, ndi kuteteza kudikha kwa madzi.

**Ndime 6: kukolola madzi ndi ulimi othiria**

Zolinga zing'onozing'ono 7 zomwe zagawidwa mu ndime imeneyi ndi kugwiritsa ntchito madzi moyenera, kukolola madzi ndi kuwagwiritsanso ntchito kukolola

**Volume II** is concerned with the more detailed level of village level plans. The target audience is the Village Development Committees themselves, guided by a skilled extension officer.

By combining the efforts of the individual village level efforts with the national and regional catchment management priorities, all stakeholders can work together to improve the state of the country's natural resources, and enable more Malawians to improve their lives.

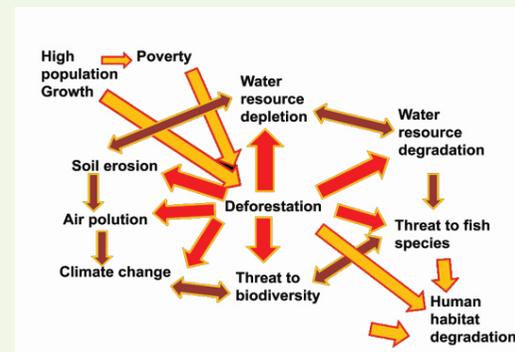
### How to use the Guidelines

The two separate Volumes are written for two different target audiences, and yet need to be viewed as a whole to ensure that the catchment management picture is complete.

## 2. Volume I: Procedural catchment management

In 1995, the Malawian Government under took the development of the National Environmental Action Plan (NEAP). In this process, nine key environmental issues were identified, namely: soil erosion, deforestation, water resources degradation and depletion, threat to fish resources, threat to biodiversity, human habitat degradation, high population growth, air pollution and climate change. Considerable work has been undertaken in Malawi since then to address these issues, and numerous aid and funding organisations have partnered with the Malawian Government to achieve this.

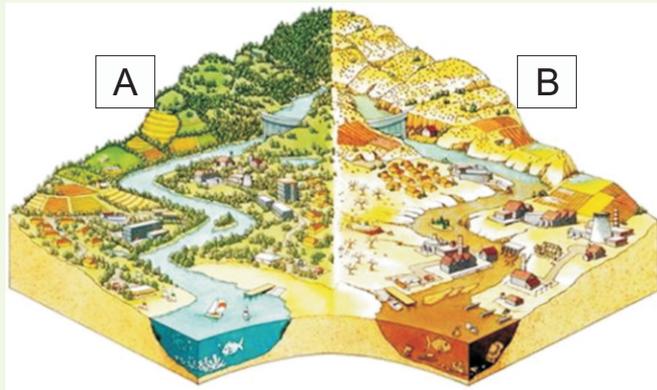
Regrettably, recent studies have confirmed that the key issues raised in the NEAP are still apparent, and that environmental degradation is still evident. The key issues are discussed in Volume I in Chapter 2. The conclusion that is reached in the report is that these key issues are interlinked, and that poverty and high population growth are major causes. The guidelines developed relate back to these key issues, and seek to provide Malawians with the tools they need to bring about the changes needed at a catchment perspective.



*Cause and effect linkage of drivers and impacts of environmental degradation*

The principles and concepts of Catchment Management are introduced in Chapter 3. These concepts include:

- The different scales that catchment management can be implemented on, from individual village level, to micro-catchments, catchments and up to entire River Basins.
- The concept of Integrated Catchment Management,
- Sustainability, and
- Reasonable utilisation.



*Illustration of good (A) and poor (B) state of both land and water resources in catchment. (Source : Waterwatch Queensland).*

**Chapter 4** outlines the **Legislative and Institutional Framework** that catchment management in Malawi operates within. Since catchment management cuts across many sectors, geographic areas and political/administrative jurisdictions, this results in the functions and responsibilities of catchment management being spread across several institutional structures. This chapter outlines the key role-players in catchment management planning and implementation, focusing on the government and legislated institutions.

The five steps that make up **Catchment Management Planning** are discussed in detail in **Chapter 5**. These steps are:

- **Step 1: Initiation**, in which the CMP team is formed, and the catchment defined. Stakeholders and role-players are identified and engaged, and a vision, aims and objectives are drafted. Then the relevant committees are formed to take the process further.

Dongosolo lowonetsetsa kuti anthu a kumudzi akutenganawo mbali posamalira malo zalembedwa ndi kulongoledwa **mu ndime 6**.

**Ndime 7:** ikulongosola mwachidule zipangizo zosankhira ndi zitsanzo zake zomwe zilipo zokhudza madzi ku malo ndi kuongolera momwe njirazo zingasankhidwire.

**ZOYENERA KUTSATIRA POSANKHA MAKOMITI OSAMALIRA MALO NDI OGWIRITSA NTCHITO MADZI (AWUS) ZAPEREKEDWA MU NDIME 8.**

Lamulo loona za madzi la m'chaka cha 2013 likufotokoza masankhidwe a makomiti osamalira malo ndi kulangiza ogwira ntchito mu mabungwe owona za madzi pa zinthu izi:

- Kusamalira madzi, kugwiritsa ndi kaperekedwe/kagawidwe.
- Thandizo la chuma, kasinthidwe, kachotsedwe kapena kusiyanasiyana kwa ziphaso ndi umwini monga mwa lamulo.
- Zinthu zina zonse zoyenera pofuna kusamalira madzi. Komiti yoona kasamalidwe ka malo ndi m'mene imakonza ndondomeko ndi malamulo osamalira malo kuphatikizapo kakhazikitsidwe ndi kagwiritsidwe ka madzi ku magulu ndi ku dera lochepa.

**Ndime 9:** Imalongozola za kapezedwe ka ndalama za mapulani osamalira malo. **Njira zina zopezera ndalama zothandizira kuteteza malo** zalembedwa mu ndime 10. Njira zosiyanasiyana zalembedwa ndi cholinga choonjezera ntchito zopezera ndalama ndi kukhala ndi chakudya chokwanira posangodalira ntchito zochepe. Zina mwa zitsanzo zomwe zakambidwa mu ndime imeneyi ndi izi:

- Kubzala mitengo yogulitsa kapena yogwiritsa ntchito pa ulimi
- Kuweta njuchi ndi kufula uchi, kukolola bowa, kutola zipatso, kutola ngumbi, kupeza mankhwala a zitsamba, usodzi
- Kukonza ndi kugwiritsa ntchito mbaula zamakono zosatha nkuni, kuchulukitsa nkuku popeza mazira kapena nyama. Manyowa a ziwetozo angathe kugwiritsidwa ntchito ku munda ndi cholinga

kuchokera ku mudzi umodzi mpaka ku malo ochepa ndi malo onse kufikira dera lonse lozungulira mitsinje.

- Dongosolo logwirizana la kasamalidwe ka malo.
- Kalimbikitsidwe ndi kagwiritsidwe ntchito koyenera.

**Ndime 4** ikufotokoza za malamulo ndi ndondomeko yake pa za mmene malo angasamalidwire m'Malawi muno. Kasamalidwe ka malo kamakhudza zinthu zambiri, momwe malowo aliri/anagawidwira komanso nkhani zokhudza ndale zimene zimapangitsa ntchito ndi udindo wa malo kufalikira madera ambiri.

Njira zisanu (5) zomwe zimapanga mapulani akasamalidwe ka malo zafotokozedwa mwatsanetsatane mu ndime 5. Njira zimenezi ndi:

**Njira 1: kukhazikitsa**, mmene gulu lakonzera mapulani akasamalidwe ka malo limakhazikitsidwa, ndi kalongosoledwe ka malo.

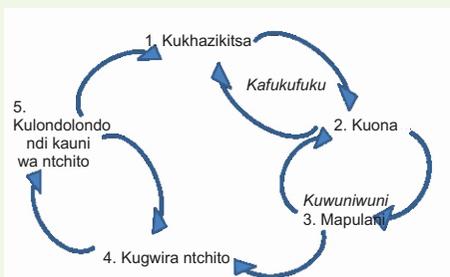
**Njira 2: kufufza ndi chiyang'aniro**

Momwe kudzera mu onse otenga nawo mbali amauzidwa ndi luso lapadera, mavuto amasankhidwa ndi kufufuzidwa ndipo masomphenya ndi cholinga cha malo zimamalizidwa.

**Njira 3: kukonza mapulani**, mmene ndondomeko za chitukuko ndi kasamalidwe ka malo zimalembedwa ndi kusankhidwa. Zimenezi ndi zomwe zimasandulika ndi kugwira ntchito ndi kukwaniritsidwa.

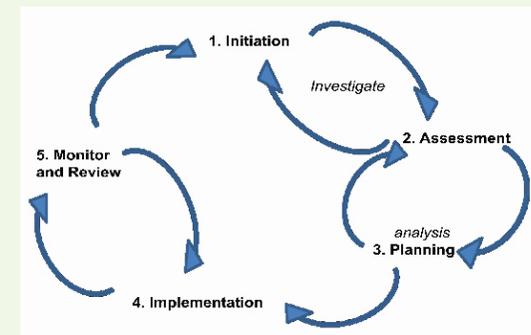
**Njira 4: kugwira ntchito**, mmene onse ogwira nawo ntchito amasankhidwa ndipo amapatsidwa mwayi ogwira nawo ntchito zosankhidwazo.

**Njira 5: kuyang'ana ndi kuonanso**, kuonetsetsa kuti ntchito ikuyenda bwino, kuona ntchito zotenga nthawi yochepa ndi ntchito zotenga nthawi yaitali ndiponso kuunikanso zotsatira ndi cholinga chofuna kukonzanso mapulani kapena momwe ntchito ingagwiridwire (ngati kungakhale koyenera kutero).



*Ndondomeko ya kasamalidwe ka malo*

- **Step 2: Investigation and Assessment**, in which, through a process of stakeholder engagement, and specialist studies, issues are identified and assessed, and the vision and mission statement for the catchment are finalised,
- **Step 3: Planning**, in which scenarios for development and management of the catchment are developed and analysed. These are then translated into strategies and actions and ultimately the implementation plan.
- **Step 4: Implementation**, in which the responsible parties identified in the implementation plan are tasked with implementing the activities identified.
- **Step 5: Monitor and Revise**, to ensure that implementation is on track, to measure short and long term impacts and to evaluate the impacts in order to modify the plan or its implementation (as necessary).



*Catchment management planning process*

**Participatory approaches for catchment management planning** are outlined and elaborated on in **Chapter 6**. Nine different approaches are discussed, as listed below:

- Village meetings
- Participatory Rural Appraisal (PRA)
- Visual mapping
- Transect walk
- Semi-structured interviews

- One-to-one interview
- Action research
- Group work
- Rapid (Relaxed) Appraisal of Agriculture Knowledge Systems (RAAKS)

The CMP team or project team should select the approach / set of approaches that most suits their needs or type of information they require.

**Chapter 7** provides a summary of the analytical tools and simulation models that are available for **Modelling** of water resources in catchments, and gives guidance on how the appropriate models should be selected.

**Guidelines on Establishing Catchment Management Committees and Water User Associations (AWUs)** are given in **Chapter 8**.

The National Water Resources Act, 2013 proposes the establishment of Catchment Management Committees to advise officers of the Water Resources Authority on issues of:

- Water resources conservation, use and allocation;
- The grant, adjustment, cancellation or variation of any licence and permit in terms of the Act, and
- Any other matters pertinent to the proper management of water resources.

The CMC is responsible for the catchment management strategy of its catchment, as well as the establishment and operation of Water User Associations (AWUs) at smaller catchment scales.

**Chapter 9** discusses **Financing Catchment Management Plans**. There are two elements to financing a management catchment plan at catchment or village level. The first would be a need to raise finance to develop the plan itself; and then, once agreed and approved by all relevant stakeholders, finance would be needed to implement prioritized elements of the overall plan.

**Alternative Sources of income to help protect catchment** areas are put forward in **Chapter 10**. A number of interventions have been developed with a view to increasing the options for generating income and food security and reduce reliance on resource degrading activities. These interventions are either natural resources-based income generating activities or tree planting for conservation purposes. Some examples that are discussed in the chapter are:

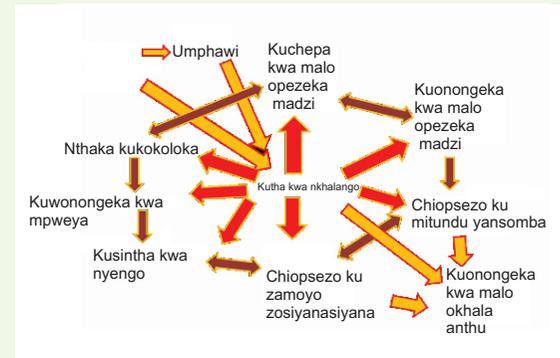
Magawo awiri osiyana alembedwa kwa ogwiritsa ntchito awiri osiyananso koma ayenera kuyang'anidwa limodzi poonetsetsa kuti malo akusamalidwa bwino.

## 2. Gawo I: Zoyenera kuchita posamala malo.

M'chaka cha 1995, dziko la Malawi linalimba ndondomeko zokhudza za chilengedwe za 'NEAP'. Mmenemu munalembedwa fundo zisanu ndi zinai (9) zokhudza za chilengedwe ndipo fundozo ndi: kukokoloka kwa nthaka, kudula mitengo mosasamala, kuchepa ndi kuonongeka kwa madzi, chiopsezo ku nsomba, chiopsezo ku zomera, kuchepa kwa malo okhala, kuchulukana kwa anthu, kuonongeka kwa mpweya komanso kusintha kwa nyengo. Zinthu zingapo zachitika m'Malawi chiyambire pofuna kuchepetsa mavutowa ndipo chithandizo chosiyanasiyana chakhala chikuperekedwa ndi mabungwe opereka thandizo mogwirizana ndi boma la Malawi pofuna kukwaniritsa ntchitoyi.

Mwachisoni, kafukufuku wa posachedwapa akusonyeza kuti ntchito zofunika zomwe zinalembedwa mu ndondomeko ya 'NEAP' sizinakwaniritsidwebe, ndipo kuonongeka kwa za chilengedwe kukupitirirabe. Fundo zofunika zakambidwa mu gawo I ndime ya chiwiri. Pomaliza zomwe zakambidwa mu lipotili ndi zakuti mavutowa ndi olowanalwana ndipo umphawi ndi kuchulukana kwa anthu ndi zomwe zikupangitsa zonsezi.

Ndondomeko zolembedwazi zikulozera ku mavuto akuluakulu amenewa ndipo zikuthandiza anthu a dziko la Malawi kupeza njira zoyenera kuchita pa nkhani yokhudza malo.



*Zoyambitsa ndi zotsatira zosokonekera kwa nyengo*

Njira ndi dongosolo losamalira malo zafotokozedwa mu gawo 3.

Dongosololi ndi monga:

- Njira zosiyanasiyana za kasamalidwe ka malo zingathe kugwiritsidwa

## KUSAMALIRA MALO NDI ZOMANGAMANGA KU MIDZI MOGWIRIZANA

### 1. Mau oyamba

Ndondomeko zimenezi zikukhudza malo onse ndipo ndikofunika kuti munthu aliyense ogwiritsa ntchito malowa atengepo gawo kuphatikizapo mafumu akuluakulu (TA) komanso Unduna osiyanasiyana m'dziko ndi boma. Izi ndi zomwe zachititsa kuti ndondomekozi zilembedwe mogwirizana ndi anthu ena onse okhudziwa. M'dziko la Malawi, bungwe losamalira nthaka ya m'mphepete mwa chigwa cha mtsinje wa Shire lotchedwa "Shire River Basin Management Program" ndi onse okhudzidwa m'dziko la Malawi kutengapo gawo mogwirizana.

Ndondomeko zimenezi zikufotokoza zokhudza zinthu za chilengedwe zomwezinapezeka ndi bungwe losamalira za chilengedwe lotchedwa 'Malawi National Environmental Action Plan' (NEAP) pa chingerezi. Mwa mavutowa ndi monga kukokoloka kwa nthaka, kudula mitengo mosasamala, kuchepetsa ndi kuonongeka kwa madzi, kuonongeka kwa nsomba, chiopsezo ku zomera, kuchepa kwa malo okhala, kuchulukana kwa anthu, kuonongeka kwa mpweya komanso kusintha kwa nyengo. Choncho zomwe zimapangitsa kuti chiwerengero cha anthu ndi umphawi zikule zimayenera kuti dziko litengepo gawo lalikulu, kuika malamulo poonetsetsa kuti ndondomeko zoikidwazi zitheke ndi kutsatidwa.

Ndondomeko zimenezi zalembedwa ndipo zili m'magawo awiri osiyanasiyana zomwe zikugwira ntchito limodzi pofuna kupereka chithunzithunzi chachikulu chosamalira malo.

**GAWO I:** Gawo limeneli likufotokoza njira zosamalira malo, cholinga chosamalira malo, mabungwe onse akhudzidwa posamalira malo ndi ndondomeko zosamalira malowo.

**GAWO II:** Gawo limeneli likufotokoza ntchito zoyenera kugwira pa mudzi. Ndondomekozi ndizongosonyeza momwe ntchito yosamalira malo ingagwiridwire pa mudzi ndi dera.

GAWO II likulongosola tsatanetsatane wa mapulani a pa mudzi. Oyenera ndi makomiti a chitukuko pa mudzi (VDC) mothandizidwa ndi luso la mlangizi.

**Kagwiritsidwe ntchito ka ndondomeko**

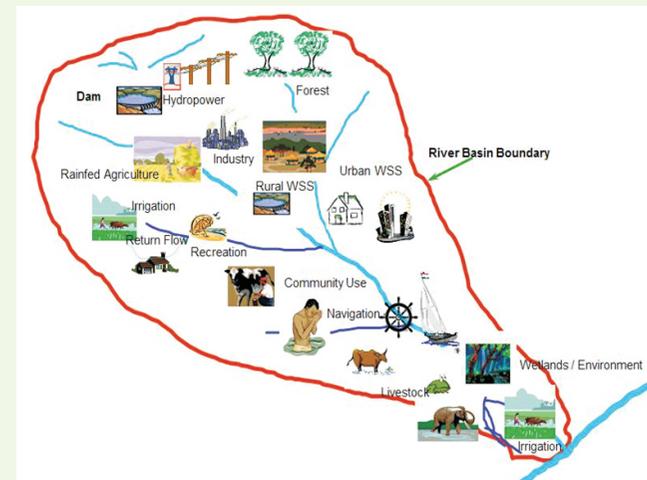
- planting of trees for commercial purposes and agriculture,
- bee keeping and processing, mushroom harvesting, fruit picking, flying ants (ngumbi), medicinal activities, fishing
- construction and use of fuel efficient stoves and fireless cookers. caring and maintenance of poultry for eggs or meat. The manure can be used as farm inputs which should help improve crop production.

### 3 Volume II: Village based catchment management

Volume II starts with an introduction to the project, similar to that of Section 1 of this Executive Summary. The **principles and concepts of Catchment Management** are then introduced in **Chapter 2** similar to Volume 1 but in a less technical manner. These concepts include:

- The different scales that catchment management can be implemented on, from individual micro-catchments, up to entire River Basins.
- The concept of Integrated Catchment Management,
- Sustainability, and
- Reasonable utilisation.

The **Village level catchment management planning process** is introduced in **Chapter 3**. The process and purpose of the Village Catchment Management Plan (VCMP) is to empower the people of the village to make decisions and take responsibility for and promote the collective action for the sustainable management and utilisation of their natural resources, especially water resources.



*Illustration of water and land use activities in a catchment*

**Guidelines for setting up Village Savings and Loan Clubs** are given in **Chapter 4**. The financial market is seen as playing a vital role in the rural development process as it increases access to credit by rural enterprises. Because farm production is seasonal, rural income is not spread evenly throughout the year, or years.

**Chapter 5: Soil and Water Conservation / Erosion Control Measures.** Seven different sub-themes are grouped under this chapter, namely: Conservation Agriculture, Rangeland Management, Soil Fertility Management, Erosion and Runoff Control Measures, Gully Management, Stream / River Bank Management, and Sediment Trapping.

#### **Chapter 6: Water Harvesting and Irrigation.**

The seven sub-themes grouped under this chapter are: Water Use Efficiency, Water Harvesting and Recycling, Water Harvesting, Micro Water Storage, Small Dams, Infiltration, and Small Scale Irrigation.

Individual guidelines range from how to improve water use efficiency by installing drip irrigation, to making use of household “grey water”.

#### **Chapter 7: Farm Management.**

Two sub-themes are covered in this Chapter: Farm Management and Sanitation.

Guidelines regarding farm management relate to creating living fences and windbreaks from trees, and how to start and run a tree nursery to provide the trees for these purposes and for afforestation projects.

#### **Chapter 8: Natural Resources Management.**

The six components of this chapter are: Forestry, Fishing, Wetlands (Dambos), Alien and Invasive Plant Management, Energy, and Waste Management.

Sustainable woodlot management and plantation forestry are described under the Forestry section. Guidelines for Natural Forest Management and Protected Forest Reserves are also given in this section. Furthermore information regarding which trees are beneficial for afforestation projects are provided.

#### **Chapter 9: Disaster management.**

Fire Management, Health and Emergency Response are the three sub-themes dealt with in this chapter.

The guidelines included in this document, are guidelines, not fixed rules.

They may need adapting to suit context specific situations. Adapting the guidelines is at the risk of the user.

**Five Annexures are provided at the end of Volume II. These cover the following subjects:**

- Annexure 1: Co-operative Agreements (Forest Reserves)
- Annexure 2: Village Natural Resource Management (VNRM) Committees and Catchment Management
- Annexure 3: Community Disaster Risk Reduction Response Plans
- Annexure 4: Fire Hazard Assessment and Mitigation
- Annexure 5: Selecting Beneficial Trees

#### **4 Conclusion**

Both Volumes of these Guidelines for Integrated Catchment Management and Rural Infrastructure are useful tools to implement catchment management in Malawi. Volume I speaks to the more technical audience responsible for overall governance of the catchments, as well as technical professionals providing specific consulting services. This volume ensures that overall strategic catchment management goals are incorporated into smaller scale plans, for example at village level. Volume II is aimed at a more 'hands on' level of audience, namely individual village organisations who are seeking to improve the livelihoods of the people in their village. The individual guidelines are specific and consist of step-by-step instructions on how to undertake the various tasks involved in responsible land care and the sustainable use of natural resources. There are also guidelines on how to create community catchment management plans, and how to feed these local goals upwards to the overall catchment management process.

The two separate volumes are designed to be used together by the catchment stakeholders in order to improve and conserve the current state of the catchment, and to ensure that the catchment continues to provide the necessary resources for livelihood in the future.

The guidelines and other related catchment management information is available on the project website: <http://www.catchmentguidelines.org.mw>