



**Unofficial translation version**

# **Capacity Development Training Curriculum**

**Training is designed for Protected Area Administration  
Specialists and Rangers**

**Ulaanbaatar**

**2009**

## **Capacity Development Training Curriculum**

### **Training is designed for Protected Area Administration Specialists and Rangers**

**Developed by:**

S. Bayarkhuu, Secretary of National Committee on Bio-Safety

N. Batsaikhan, Professor, Department of Biology, National University of Mongolia

D. Batkhuu, Society for National Parks

M. Soyolmaa, Protected Area Management Department, Ministry of Nature, Environment, and Tourism

B. Munkhchuluun, WWF Mongolia Programme Office-Protected area project officer

**Training curriculum was developed with funding of WWF Mongolia**

Approved by:  
(Signature)

A. Namkhai, Director of Protected Area  
Management Department, Ministry of  
Nature, Environment and Tourism (MNET)

## **Curriculum Training on Capacity Development for Protected Area Administration Specialists and Rangers**

### **One: Justifications**

There are 24 Protected Area Administrations (PAAs) running conservation management of 61 Protected Areas (PAs) that cover 13.9 per cent of territory of Mongolia and 95 specialists and 225 rangers working at the PAAs.

Assessment results and findings on PA network human resource and capacity conducted for recent five years and showed that PAA specialists and rangers were not able to adequately carry out their duties and responsibilities as stated in their Terms of References (ToR) and acted within legal framework due to low levels of their knowledge and skills trained.

According to the assessment findings on educational background of PAA specialists and rangers, 32 % of PAA rangers were educated in environmental fields, 43 % of PAA rangers (in duplicated numbers to the previous data) were provided with professional training courses for rangers, and 66 % of PAA specialists have had their bachelor's degrees in related environmental field.

In 2006-2008, there were 52 refresher training courses for PAA specialists and rangers organized and totally 142 (in duplicated numbers) individuals attended them. 90 per cent of the organized training courses were delivered and organized within the framework of national and international environmental projects and programs implemented and implementing in Mongolia. The refresher training courses organized were dealt with various environmental and conservation topics e.g. methodologies of studies, inventories of some wildlife species, legal issues, the application of geographical information system (GIS), natural resource management, and mobilization and participation of local communities in conservation activities. However, specialists and rangers from PAAs, where national and international projects and programs were not implemented, could not attend the refresher training courses. From these findings, we could judge that the national and international projects and programs have played an important role in delivery of refresher training for PAA specialists and rangers. On other side, uneven accessibility of refresher training courses among PAA specialists and rangers directly resulted from unsystematic management and lack of training programs and planning in the past.

Thus, the needs to develop refresher and capacity development training curriculum for PAA personnel including specialists and rangers are required to be identified and handled in the immediate future.

Training curriculum has been developed based on the current ToRs for PAA personnel, PA human resource and capacity assessment findings and recommendations,

comments and feedback of PAA specialists and rangers as well as relevant legislative acts effective in the country.

The following legal acts and their statements were adhered and used as references for the development of training curriculum:

- Article 33.6 of Mongolian Law on Public Service: “State organizations shall develop and implement training programs for State/Public servants”;
- Statements in 1-10 subtitles/paragraphs of Article 30 of the Mongolian Law on Special Protected Areas;
- Decisions made by the MNET on requirements of job descriptions and adequate performances of duties of PAA specialists and rangers and
- Recommendations from a survey “Current Status of PAA Specialists’ and Rangers’ Attendance of Training Organized by Environmental Projects” conducted by the PA Management Department, MNET and an assessment on PAA Manpower Capacity, and Financial Needs conducted within the framework of projects “Support to Mongolia in Implementation of Protected Area Program of Biodiversity Convention and
- Biodiversity Convention Implementation;

The Protected Area Management Department of Ministry of Nature, Environment and Tourism and WWF Mongolia Country Office jointly developed training curriculum based on comments and recommendations from respective stakeholders, in addition to the abovementioned references.

With the purpose to be based on actual needs of trainees and administrations, consider priorities of achievements of each PA objectives, and pre-identify and implement more workable approaches of conservation and sustainable use of ecosystem and natural resources, we included in the curriculum of capacity building and refresher training for PA specialists and rangers some important issues e.g. research and monitoring, management, public awareness, and legal aspects.

## **Two: Purpose:**

Main purpose of training curriculum is to provide PAA specialists and rangers with phase-by-phase capacity development training on the environment, biodiversity, and legal aspects and to support the sustainable development through delivery of State policy issues to local communities, internal and external researchers, and tourists/ visitors in participation of PAA specialists and rangers and improve their knowledge and capacities.

### Three. General Plan for Capacity Development Training Program:

#### A. Curriculum of Capacity Development Training for PAA SPECIALISTS

Sections & Themes		Lesson Topics (knowledge and skills to acquire)
<b><i>I. Research and monitoring:</i></b>		
<b>1</b>	<b>Biological diversity</b>	<ul style="list-style-type: none"> <li>• Concepts on applied science Conservation Biology &amp; biodiversity studies (e.g. genetic, species, and ecosystem aspects);</li> <li>• Classifications/ categories of International PAs, national PA network and justifications of taking areas under protection, and representative biological species within the PAs;</li> <li>• Specific geographical features and vegetation covers of alpine, steppe, forest, gobi-desert, riparian, and low mountain ecosystems;</li> <li>• Biodiversity and its historical and recent overviews (historical ranges of the Mongolian gazelle, Khulan, and Bacterian camel, and decrease in marmot and other species populations and loss of their habitats and ranges);</li> <li>• Regionally and globally endangered wildlife (fauna and flora) species that require high level of protection;</li> <li>• Identify physic-geographical features of respective PAs based on reference materials and literature available;</li> <li>• Positions of PAs in Mongolia in the worldwide biographical provinces;</li> </ul>
<b>2</b>	<b>Methodologies of data collection during observations and surveys</b>	<ul style="list-style-type: none"> <li>• Use citations from reference materials and literature for surveys;</li> <li>• Develop general plan for data collection/survey materials, observations, and surveys;</li> <li>• Fix dates and seasons for surveys and their frequencies;</li> <li>• Mark/enter the data and information collected on a topo-geographical map of 1:500000 and more scales and use GPS and other field work tools for collection and entry of data;</li> <li>• Use GIS for PA researches and documentation of data and information with sources of information, quantities, scales, remarks/ point of Northern, species names, researchers' names, lists of reference materials, dates, photos, etc;</li> <li>• Use compass for proper identification of directions and identify landscape features (e.g. relief &amp; mountains) by using maps;</li> <li>• Randomly select research and monitoring plots, maintain records on dominant plant species, take samples of biomass (yields), &amp; keep records;</li> <li>• Methodologies of making herbariums, putting labels, &amp; record keeping;</li> <li>• Methodologies of identification of dominant woody plant species within the PAs, measuring heights and diameters of trees and identification of their densities;</li> <li>• Methodologies of identification, making collections, and conservation of inferior or lower plants;</li> <li>• Methodologies of identification, protection, and making collections of endangered invertebrate species, labelling, and keeping records;</li> </ul>

		<ul style="list-style-type: none"> <li>• Methodologies of fishing, identification, and conservation;</li> <li>• Methodologies of capturing, identification, and conservation of amphibians;</li> <li>• Methodologies of capturing, identification, and conservation of reptiles;</li> <li>• Methodologies of bird identification, collection of stuffed birds and feathers;</li> <li>• Methodologies of keeping records and inventories on predator birds' nests;</li> <li>• Methodologies of identification, capturing, and making collections of mammal species;</li> <li>• Methodologies of identification of pastureland/rangeland carrying capacities;</li> <li>• Identification of rutting periods of wildlife species (e.g. spawning periods of fish, frog, &amp; toad);</li> <li>• Proper use of field equipment and tools (e.g. GPS, photo camera, binoculars and telescope) ;</li> </ul>
3	<b>Field work:</b>	<ul style="list-style-type: none"> <li>• Recommendations on photographing wildlife (animals &amp; plants) species and scenery and documentation;</li> <li>• Technical safety requirements during PA field work (e.g. vaccination against marmot plague and avian flu and allergies of various types of plants);</li> <li>• Field study works: main species of vertebrates in PAs (fish, amphibians, reptiles, birds &amp; mammals);</li> <li>• Identification of various natural zones including different wildlife habitats and ranges (different ecosystems) and species diversities and their distributions areas, core areas, and identification of wildlife species by using their tracks and traces (e.g. pits, nests, holes, gathering behaviours, wastes, occupied areas, and leftover parts e.g. hairs, traces, and feathers) and wildlife parts e.g. skulls, hooves, and identification of wildlife species with their horns, hair, and skins;</li> <li>• Basic understanding on wildlife breeding biology;</li> <li>• Methodologies of monitoring on invertebrate species, fish, amphibians, reptiles, birds, and mammals;</li> <li>• Basic methodologies of identification of ages and sex of endangered ungulates;</li> <li>• Random selection of areas for sample taking and identification of dominant plant species and methods of making herbarium and keeping geo-botanical records, and taking biomass samples;</li> <li>• Collecting and keeping records on vegetation covers, dynamics of plant communities, and core zones of dominant plants in different natural zones;</li> <li>• Identification of indicator species in overgrazed areas and keeping records on endangered plants, their distribution areas/ranges and locations;</li> </ul>
4	<b>Environmental Database and GIS</b>	<ul style="list-style-type: none"> <li>• Use of Arc View, Arc GIS, and ILWIS software;</li> <li>• Establish, update and share environmental database;</li> <li>• Analyse data and information collected from PAs;</li> </ul>
<b>II. Monitoring:</b>		
5	<b>Ecosystem monitoring:</b>	<ul style="list-style-type: none"> <li>• Identification and assessment of ecosystem conservation importance;</li> <li>• Identification and assessment of the important species that play an important role in the ecosystem and their conservation values and status (e.g. key, umbrella, and herd species);</li> </ul>

		<ul style="list-style-type: none"> <li>• Monitoring on biodiversity based on selection;</li> <li>• Monitoring in selected areas by frequently taken samples;</li> <li>• Assessment of long-term research material findings on biodiversity and climate;</li> <li>• Quarterly based inventories and documentation of wildlife populations with videos and photos and take photos with automatic photo cameras in some areas, if necessary for monitoring;</li> <li>• Long term research and monitoring through selecting important wildlife (animal or plant) species that play important roles in the ecosystem and quarterly based monitoring and observations;</li> <li>• Monitoring on populations and distributions of alien species (introduced);</li> </ul>
6	<b>Monitoring over regionally and globally important wildlife species within the PAs:</b>	<ul style="list-style-type: none"> <li>• Distributions and populations status of Central Asian endemic vertebrate and invertebrate species;</li> <li>• Distributions and status of useful and endangered (and endemic) species;</li> </ul>
7	<b>Monitoring on vegetation</b>	<ul style="list-style-type: none"> <li>• Collection and keeping records on biomass (yields) and species diversity inside and outside of fenced plots that were randomly selected and entry of findings into the database;</li> <li>• Assess changes to plant communities (e.g. abundance &amp; covers) based on quarterly and yearly monitoring, and keeping records;</li> <li>• Collect and enter data on anthropogenic plant species and their distributions to database;</li> </ul>
8	<b>Monitoring on harmful/ damageable species distributions:</b>	<ul style="list-style-type: none"> <li>• Methodologies of identification of harmful species (e.g. Brandt's vole, grass hoppers, Gypsy moth ), whose populations are frequently/periodically overestimated, population densities, distribution areas/ranges by using GIS software and harm or damage ranking methods;</li> <li>• Identification and assessment of wildlife species/individuals died with focal infectious disease symptoms, their locations, numbers of species / individuals affected, periods of time, and covered areas;</li> </ul>
9	<b>Identification of physic-geographical changes to wildlife habitats &amp; ranges</b>	<ul style="list-style-type: none"> <li>• Identification of air temperature, precipitation, water run-off and wind speeds, and mechanical structures of soil within PAs;</li> <li>• Identification of locations and numbers of dried up natural springs and mineral water bodies, keeping records and inventory (including duration and periods of time), and collection of data on saltlicks and saline buried or covered by;</li> </ul>
10	<b>Monitoring on species diversity and population dynamics</b>	<ul style="list-style-type: none"> <li>• Main indicators of natural populations and monitoring and identification of their importance (populations, densities, age structures, sex ratios, migrations and movements, and loss)</li> <li>• Identification of overall population status;</li> <li>• Identification of main causes of population decreases;</li> <li>• Identification of survivability and breeding effects of populations in PAs;</li> <li>• Identification of hunting impacts on populations;</li> <li>• Frequent surveys and inventories of wildlife species during seasons e.g. rutting, gathering, and nesting periods and update database with data and</li> </ul>

		<p>findings;</p> <ul style="list-style-type: none"> <li>• Identification of wildlife migrations, movements and occupied and grazing areas by using satellite images, radio transmitters, and other tools such as collars; mapping &amp; entering data and findings into database;</li> </ul>
11	<b>Monitoring on species diversity</b>	<ul style="list-style-type: none"> <li>• Identification and monitoring on negative impacts on PA wildlife populations from improper human activities;</li> <li>• Degradation of PA ecosystems and their biodiversity loss and impacts on livelihoods of local communities and potential ways to reduce them;</li> <li>• Identification of main causes of habitat degradations;</li> <li>• Monitoring on main causes of overgrazing and their recoveries;</li> <li>• Identification and assessment of pollution and qualities of fresh water bodies by using determination species' densities, status and community diversity;</li> </ul>
12	<b>Monitoring on preserving more favourable wildlife habitats and ranges within PAs</b>	<ul style="list-style-type: none"> <li>• Monitoring on disaster prevention conditions (e.g. fire prevention strips, ditches preventing from floods, &amp; preventive measures from natural disasters e.g. droughts &amp; heavy snowfalls);</li> <li>• Build livestock enclosures around natural springs and mineral water bodies and monitoring on recovery status of dried up springs and water bodies;</li> <li>• Monitoring on recovery of degraded wildlife habitats and ranges (e.g. planting trees, use of water organisms, pastureland management or rotation system, and limitation to haymaking);</li> <li>• Monitoring on conservation and sustainable use of reeds and crane stands along rivers;</li> <li>• Monitoring on recovery of natural saline areas and saltlicks;</li> </ul>
<b>III. Protected Area Conservation Planning and Public Awareness Activities:</b>		
13	<b>Development of action plans for ecosystem conservation</b>	<ul style="list-style-type: none"> <li>• Plan conservation activities for PAs;</li> <li>• Plan conservation activities for PA biodiversity;</li> <li>• Develop methodological recommendations for development of management plans for PAs;</li> </ul>
14	<b>Planning of biodiversity conservation activities</b>	<ul style="list-style-type: none"> <li>• Develop and implement conservation plans for endangered, very rare, umbrella, key, ecosystem engineering, and endemic wildlife (fauna and flora) species in PAs;</li> <li>• Develop and implement plans on conservation of wildlife breeding, nesting and grazing areas and establishment of conservation and re-introduction strips for rutting and breeding areas of fragmented small sized populations, in order to ensure more stabilized and ordinary populations;</li> <li>• Study reasons of seasonal movements and breeding behaviours of endangered wildlife species with long term frequencies;</li> </ul>

15	<b>Taxonomy, populations, and existence forms of biodiversity</b>	<ul style="list-style-type: none"> <li>• Overview on invertebrates in Mongolia and conservation of some specific groups;</li> <li>• Overview on fish in Mongolia, distributions, endangered species and conservation of fish species;</li> <li>• Overview on amphibians and reptiles in Mongolia, distributions, endangered species and conservation of fish species;</li> <li>• Overview on bird species in Mongolia, breeding and nesting areas, their conservation and sustainable hunting management;</li> <li>• Overview on mammals in Mongolia, distributions, hunting or game species and their conservation;</li> <li>• Sustainable use and conservation of rare and useful plants and their distributions;</li> </ul>
16	<b>Management options on development of PAs as model sustainable development focal areas;</b>	<ul style="list-style-type: none"> <li>• Methodologies of assessment and planning on the current and future PA environmental status;</li> <li>• Methodologies of assessment and planning on socio-economic development of PAs and their buffer zones;</li> <li>• Recommendations on development and implementation of policies on sustainable development based area through conservation and sustainable use of PAs and their buffer zone diversity resources;</li> <li>• Planning on support to the development of sustainable development options through ensuring balanced relations between conservation of PA biodiversity and development of sustainable livelihood of local communities residing the Pas (develop PA buffer zones as model sustainable development focal areas);</li> <li>• Development of regulations and procedures of legally allowed activities for PAs and planning on activities (e.g. pastureland use, haymaking &amp; fire fuel options);</li> </ul>
17	<b>Tourism development in PAs</b>	<ul style="list-style-type: none"> <li>• Development of types of model eco-tourism that are suitable for PAs and ecotourism development program;</li> <li>• Development of safety instructions for PA visitors and vacationers;</li> <li>• Organization of guide's and interpreter's training for local students and youths , who could work during summer time;</li> <li>• Dissemination of information on PAs attractive for tourist/visitors and tourists-researchers (on internet), offer them chances to take a part in collection of data and information on PAs, cooperate on creating photo shows e.g. on wildlife (fauna and flora), landscape, and historical and cultural findings;</li> <li>• Cooperation with companies, economic entities and NGOs that are capable to carry out tourism activities and conduct public awareness on PA biodiversity, valuable historical and cultural heritages, ethnographic cultures and traditions;</li> <li>• Public awareness on standards of tourism activities among individuals, community groups, companies, and economic entities that have certificates to engage in the businesses within PAs;</li> </ul>

18	<b>Achievement of PA objectives through support and participation of local communities</b>	<ul style="list-style-type: none"> <li>• Public awareness on goal, objectives, justifications of PAs and their regional and global importance and values;</li> <li>• Develop methodological recommendations on improved public awareness on options of environmental conservation and sustainable use of natural resources for local communities;</li> <li>• Develop and disseminate scientifically based options on conservation, sustainable use and ownership of natural resources by local community groups;</li> <li>• Training on improved communication skills;</li> <li>• National and international experiences on increasing participation of local communities and private sectors in environmental conservation and restoration of natural resources;</li> <li>• Options to solve some contradicted relations and interests of local residents that are caused by taking areas under protection or PA network;</li> <li>• Proposals on model increasing participation of local communities in environmental conservation based on best practices and experiences of local PAs;</li> <li>• Public awareness on traditional environmental protection practices of the Mongolians and the nomads;</li> <li>• Public awareness and dissemination of research and monitoring results that are found within the PAs and residential areas;</li> <li>• Identification of reasons of decline in endangered and threatened species within the residential areas and take appropriate measures on mobilization of local communities in reducing and elimination of the impacts identified;</li> </ul>
----	--	---

**IV. Legal Framework and Inspection:**

19	<b>Actions to ensure adequate enforcement of environmental and PA related legislations and international Conventions/ Treaties</b>	<ul style="list-style-type: none"> <li>• Public awareness on environmental legislations, programs and other legal acts among local communities;</li> <li>• Identification of types and trends of environmental violations found at local level and preventive measures and options against them;</li> <li>• Organization of training and provision of recommendations on legal aspects for volunteer rangers and local community groups and mobilization into patrolling and inspection tasks;</li> <li>• Enforcement or adherence of environmental State inspector's rights and obligations;</li> <li>• Establishment of database on environmental violations and crimes arrested at local level and identification of their locations, seasons, durations and frequencies;</li> <li>• Cooperation with teachers and students of local secondary schools in order to build up ethical young generation;</li> <li>• Public awareness and publications on international Conventions and Treaties and their importance (e.g. Conventions on Biodiversity, CITES, Conservation of Migratory Species, and Protocol on Bio-Safety);</li> </ul>
----	--	---

## **B. Curriculum of Capacity Development Training for PAA RANGERS**

<b>Sections &amp; Themes</b>		<b>Lesson Topics (knowledge and skills to acquire)</b>
<b><i>I. Research &amp; Monitoring:</i></b>		
<b>1</b>	<b>Biological diversity</b>	<ul style="list-style-type: none"> <li>• Concepts on applied science Conservation Biology &amp; biodiversity studies (e.g. genetic, species, and ecosystem aspects);</li> <li>• national PA network, justifications of taking areas under protection, and representative biological species within the PAs;</li> <li>• Specific geographical features and vegetation covers of alpine, steppe, forest, gobi-desert, riparian, and low mountain ecosystems;</li> <li>• Biodiversity and its historical and recent overviews (historical ranges of the Mongolian gazelle, Khulan, and Bacterian camel, and decrease in marmot and other species populations and loss of their habitats and ranges);</li> <li>• Regionally and globally endangered wildlife (fauna and flora) species that require high level of protection;</li> </ul>
<b>2</b>	<b>Methodologies of data collection during observations, surveys &amp; field trips:</b>	<ul style="list-style-type: none"> <li>• Use citations from reference materials and literature for surveys;</li> <li>• Collection of survey related materials and observations;;</li> <li>• Mark/enter the data and information collected on a topo-geographical map of 1:500000 and more scales and use GPS and other field work tools for collection and entry of data;</li> <li>• Use GIS for PA researches and documentation of data and information with sources of information, quantities, scales, remarks/ point of Northern, species names, researchers' names, lists of reference materials, dates, photos, etc;</li> <li>• Use compass for proper identification of directions and identify landscape features (e.g. relief &amp; mountains) by using maps;</li> <li>• Methodologies of making herbariums, putting labels, &amp; record keeping;</li> <li>• Methodologies of identification of dominant woody plants within the PAs, measuring heights and diameters of trees and identification of their densities;</li> <li>• Methodologies of fishing and identification fish species;</li> <li>• Methodologies of capturing and identification of amphibians;</li> <li>• Methodologies of capturing and identification of reptiles;</li> <li>• Methodologies of identification of birds and collection of feathers;</li> <li>• Methodologies of identification, capturing, and making collections of mammal species;</li> <li>• Methodologies of identification of pastureland/rangeland carrying capacities;</li> <li>• Identification of rutting periods of wildlife species;</li> <li>• Proper use of field equipment and tools (e.g. GPS, photo camera, binoculars and telescope) ;</li> <li>• Photographing skills: scenery, wildlife species and documentation;</li> <li>• Technical safety requirements during PA field work (e.g. vaccination against marmot plague and avian flu and allergies of various types of plants);</li> <li>• Field study works: main species of vertebrates in PAs (fish, amphibians,</li> </ul>

		<p>reptiles, birds &amp; mammals);</p> <ul style="list-style-type: none"> <li>• Identification of various natural zones including different wildlife habitats and ranges (different ecosystems) and species diversities and their distributions areas, core areas, and identification of wildlife species by using their tracks and traces (e.g. pits, nests, holes, gathering behaviours, wastes, occupied areas, and leftover parts e.g. hairs, traces, and feathers) and wildlife parts e.g. skull, hooves, and identification of wildlife species with their horns, hair, and skins;</li> <li>• Identification of indicator species of overgrazing;</li> <li>• Keeping records and video recording on endangered plant species and their ranges or distribution areas;</li> <li>• Basic understanding on wildlife breeding biology;</li> <li>• Methodologies of monitoring on invertebrate species, fish, amphibians, reptiles, birds, and mammals;</li> <li>• Basic methodologies of identification of ages and sex ratios of endangered ungulates;</li> <li>• Long term observations and surveys by selecting some species of wildlife (animals or plants) that are important for the ecosystem;</li> </ul>
<b>II. Monitoring:</b>		
3	<b>Ecosystem monitoring:</b>	<ul style="list-style-type: none"> <li>• Assist in identification and assessment of ecosystem conservation importance;</li> <li>• Learning identification and assessment of the important species that play an important role in the ecosystem and their conservation values and status (e.g. key species, umbrella and herd species);</li> <li>• Preparation for monitoring on biodiversity based on selection;</li> <li>• Preparation for monitoring in selected areas by frequently taking samples;</li> <li>• Monitoring on populations and distributions of alien species (introduced);</li> </ul>
4	<b>Assessment of global importance of PAs</b>	<ul style="list-style-type: none"> <li>• Identification of distributions and populations status of Central Asian endemic vertebrate and invertebrate species;</li> <li>• Understanding on importance of useful and endangered (and endemic) plants;</li> <li>• Understanding on positions and perspectives of national PAs in worldwide bio-geographical provinces;</li> </ul>
5	<b>Monitoring on harmful/ damageable species distributions:</b>	<ul style="list-style-type: none"> <li>• Methodologies of identification of harmful species (e.g. Brandt's vole, grass hoppers, Gypsy moth), whose populations are frequently/ periodically overestimated, population densities, distribution areas/ranges and ranking of harms or damages;</li> <li>• Identification and assessment of wildlife species/individuals died with focal infectious disease symptoms, their locations, numbers of species / individuals affected, periods of time, and covered areas;</li> </ul>
6	<b>Identification of physic-geographical changes to wildlife habitats &amp; ranges</b>	<ul style="list-style-type: none"> <li>• Learning the identification of air temperature, precipitation, water run-off and wind speeds, and mechanical structures of soil within PAs;</li> <li>• Data collection and keeping records on locations and numbers of dried up natural springs and mineral water bodies and on saltlicks and saline buried or covered by;</li> </ul>

7	<b>Monitoring on loss of species diversity and their causes</b>	<ul style="list-style-type: none"> <li>• Identification and monitoring on negative impacts on PA wildlife populations from improper human activities and potential ways to reduce and eliminate them;</li> <li>• Identification of PA ecosystem degradation and negative impacts on biodiversity and livelihoods of local communities;</li> <li>• Identification and assessment of overgrazing rates and potential recovery options;</li> </ul>
8	<b>Creating and preserving more favourable habitats within PAs (biotechnical measures)</b>	<ul style="list-style-type: none"> <li>• Disaster prevention management (e.g. fire prevention strips, ditches preventing from floods, &amp; preventive measures from natural disasters e.g. droughts &amp; heavy snowfalls);</li> <li>• Build livestock enclosures around natural springs and mineral water bodies and make mouths of dried up springs and water bodies open;</li> <li>• Reduce wildlife habitat degradation (e.g. planting trees, pastureland management or rotation system, and limitation to haymaking);</li> <li>• Monitoring on conservation and sustainable use of reeds and crane stands along rivers;</li> <li>• Put saltlicks in wildlife habitats and ranges;</li> </ul>
<b>III. Planning and Public Awareness on Protected Areas:</b>		
9	<b>Management options on development of PAs as model sustainable development focal areas;</b>	<ul style="list-style-type: none"> <li>• Methodologies of assessment and planning on the current and future PA environmental status;</li> <li>• Methodologies of assessment on socio-economic development of PAs and their buffer zones;</li> <li>• Learning from methodologies of development and implementation of policies on sustainable development based focal area through conservation and sustainable use of PAs and their buffer zone diversity resources;</li> <li>• Methodological recommendations for support to the development of sustainable development options through ensuring balanced relations between conservation of PA biodiversity and development of sustainable livelihood of local communities residing the PAs (develop PA buffer zones as model sustainable development focal areas);</li> <li>• Development of regulations and procedures on legally allowed activities for PAs and planning on activities (e.g. pastureland use, haymaking &amp; fire fuel options);</li> </ul>
10	<b>Tourism development in PAs</b>	<ul style="list-style-type: none"> <li>• Dissemination of information on PAs attractive for tourist/visitors and tourists-researchers (on internet), offer them chances to take a part in collection of data and information on PAs, cooperate on creating photo shows e.g. on wildlife (fauna and flora), landscape, and historical and cultural findings;</li> <li>• Cooperation with companies, economic entities and NGOs that are capable to carry out tourism activities and conduct public awareness on PA biodiversity, valuable historical and cultural heritages, ethnographic cultures and traditions;</li> <li>• Public awareness on standards of tourism activities among individuals, community groups, companies, and economic entities that have certificates to engage in the businesses within PAs;</li> <li>• Ensure the enforcement of safety instructions for PA visitors and</li> </ul>

		<p>vacationers;</p> <ul style="list-style-type: none"> <li>Publicize the instructions and recommendations among individuals, community groups, and companies or economic entities that are certified to engage in the activities in PAs;</li> </ul>
11	<b>Achievement of PA objectives through support and participation of local communities</b>	<ul style="list-style-type: none"> <li>Public awareness on goal, objectives, justifications of PAs and their regional and global importance and values;</li> <li>Increase public awareness on options of environmental conservation and sustainable use of natural resources for local communities;</li> <li>Training on improved communication skills;</li> <li>Develop and disseminate scientifically based options on conservation, sustainable use and ownership of natural resources by local community groups;</li> <li>National and international experiences on increasing participation of local communities and private sectors in environmental conservation and restoration of natural resources;</li> <li>Options to solve some contradicted relations and interests of local residents that are caused by taking areas under protection or PA network;</li> <li>Proposals on model increasing participation of local communities in environmental conservation based on best practices and experiences of local PAs;</li> <li>Public awareness on traditional environmental protection practices of the Mongolians and the nomads;</li> <li>Public awareness and dissemination of research and monitoring results that are found within the PAs and residential areas;</li> <li>Identification of reasons of decline in endangered and threatened species within the residential areas and take appropriate measures on mobilization of local communities in reducing and elimination of the impacts identified;</li> </ul>
<b>IV. Legal Framework and Patrolling:</b>		
12	<b>Actions to ensure adequate enforcement of environmental and PA related legislations and international Conventions/ Treaties</b>	<ul style="list-style-type: none"> <li>Public awareness on environmental legislations, programs and other legal acts among local communities;</li> <li>Identification of types and trends of environmental violations found at local level and preventive measures and options against them;</li> <li>Organization of training and provision of recommendations on legal aspects for volunteer rangers and local community groups and mobilization into patrolling and inspection tasks;</li> <li>Enforcement or adherence of environmental State inspector's rights (e.g. impose fines and write down acts) and obligations;</li> <li>Establishment of database on environmental violations and crimes arrested at local level and identification/analyze of their locations, seasons, durations and frequencies;</li> <li>Cooperation with teachers and students of local secondary schools in order to build up ethical young generation;</li> <li>Public awareness and publications on international Conventions and Treaties and their importance (e.g. Conventions on Biodiversity, CITES, Conservation of Migratory Species, and Protocol on Bio-Safety);</li> </ul>

#### **Four: Methodologies:**

Capacity building training will be organized in classroom (e.g. lectures, laboratory tests, & workshops/discussions) and non-classroom (e.g. on-line or internet) forms as well as field work including individual works or experience sharing) (*Table 1,2*). Regarding non-classroom training, the PAA specialists and rangers will jointly do field works within the PAs under their responsibilities and participate in experience sharing trips that are organized by the MNET and other environmental projects and programs implementing in the country.

Each topic included in this curriculum will be detailed and elaborated with comprehensive training program that meets the real needs. The curriculum and program should set out the **program titles/names, levels, credit hours (package of hours), classroom studying hours, interrelationships of the subjects, justifications, goals, objectives, methodologies, assessments, applications, topics of self-studying, and reference materials or literature.**

Self studying or individual works, field trips, and some parts of lectures and practical works /discussions shall be managed and supervised by the PAA specialists.

This training curriculum is designed for improvement of knowledge and skills of PAA specialists (who have their bachelor's degrees) and rangers through delivery of refresher training for three years. During this period of time, the PAA specialists and rangers should earn 98 and 58 credit hours respectively. One credit hour set out in this training curriculum is equal to 16 hour lectures or 32 hour seminars/practical works and 48 hour laboratory test works as stated in university or college level training standards in the country. Selecting relevant lessons and topics (that are more applicable for performances of duties and obligations) from training program, the PAA specialists shall have at least 45 credit hours and rangers shall have at least 30 credit hours.

Although this training program is designed for PAA specialists and rangers to improve their knowledge and capacities, it can also be used as capacity building training program for environmental specialists and inspectors of Aimag and Soum Environmental Protected Agencies.









## **Six: Assessment/Evaluation:**

As PAA specialists and rangers complete the capacity development training, they will be able to assess their performances against their job descriptions and their requirements and to identify their needs of future capacity building training. Once this is capacity development training programme for PAA personnel, trainers shall test attendees' knowledge and skills before and after completion of training paying particular attentions to their improvements.

It is agreed to that the attendees' achievements will be evaluated or assessed by supervisors and trainers:

### **1. Assessment by supervisors:**

When the PAA specialists and rangers make or renew their employment contracts (Yearly Output Contracts) with their employers at the beginning of every year, they will plan how many credit hours to be earned/studied for the contracting year. At the end of year, their performances will be assessed by their supervisors (in accordance with the Public Service Council instructions on performance or output contract assessment).

### **2. Assessment by trainers:**

Trainers will assess the achievements of each student in each subject studied giving detailed schedules and appraisal forms. After completion of training courses, each student will receive his/her credit results (A, B, C, D, F) based on trainers' appraisals to credit hours the attendee earned. Meeting specific methodologies of each lesson, trainers will simultaneously use non-standard/informal appraisal results for achievement of students.

## Seven: Reference Materials:

To organize this capacity development training, it is necessary to make lists of reference materials or literature for each lesson and to present to attendees. We show the following list of Reference materials and website addresses the students must study:

1. Richard. B. Primack. D. Batbold. R. Samiya. N. Batsaikhan. "Conservation Biology". 2003. UB.
2. R. Samiya. M. Mullenberg. "Nature Conservation in Mongolia". 2006. UB.
3. Ya. Adiya. D. Suran. "Manual for Volunteer Rangers". 2008. UB
4. William J, Sutherland "Conservation handbook Research, Management and Policy" 2000, 2001, 2004.
5. Ts. Tuya. B. Mijiddorj. Yad. Adiya. B.Munkhtsog. "Manual of Rangers". 2005, UB.
6. Ch. Krebs. "Ecology". 2006. UB.
7. Environmental Laws. 2007. UB
8. Environmental Laws, Policy, Programme, and Regulations. 2006. UB.
9. B. Ouyngerel. "Special Protected Areas in Mongolia". 2004. UB.
10. D. Myagmarsuren. D. Enebish. "Protected Areas in Mongolia". 2008. UB.
11. [www.mne.mn](http://www.mne.mn)
12. [www.legalinfo.mn](http://www.legalinfo.mn)
13. [www.iucn.org](http://www.iucn.org)
14. [www.wwf.org](http://www.wwf.org)
15. [www.wwf.mn](http://www.wwf.mn)
16. [www.econet.mn](http://www.econet.mn)
17. [www.geodata.mne-ngic.mn](http://www.geodata.mne-ngic.mn)
18. [www.ngic.mn](http://www.ngic.mn)
19. [www.cbd.org](http://www.cbd.org)

## **Recommendations on organization and delivery of Capacity Development Training for PAA Specialists and Rangers**

For successful organization and delivery of Capacity Development Training for PAA Specialists and Rangers, training is designed under special curriculum that includes the biodiversity, research and monitoring, management options, public awareness, and law enforcement, we are recommending:

### **1. Regarding the implementation MECHANISMS:**

- In order to ensure the enforcement of Article 33.6 of Mongolian Law on Public Service: “State organizations shall develop and implement training programs for State/Public servants”, training curriculum is being developed. Thus, training curriculum and programme will be approved by the Ministry of Nature, Environment, and Tourism and the Protected Area Management Department of the Ministry shall be responsible for organization and delivery of training.
- For organization of capacity development training for PAA specialists and rangers, the responsible organization will select and make contracts with academic institutions and universities/colleges. After all prerequisites and preparation are adequately done, the capacity development training program should be organized for 3-4 years. In order to deliver quality training, trainers’ and professors’ expertise and methodologies should be accurately considered for topics and lessons in training programme. It is recommendable to give the topics and lessons in training programme by specialized trainers and professors, not by an academic institution only selected.

To ensure successful training programme, PAA will have the following obligations:

- When the PAA specialists and rangers make or renew their employment contracts (Yearly Output Contracts) with their employers at the beginning of every year, it needs to include how many credit hours to be earned/studied by the specialists and rangers for the contracting year.

- It needs to provide the specialists and rangers with opportunities to study (e.g. classrooms, trainers, necessary equipment and tools, textbooks and manuals). We have selected on-line training as a main training form, because it has advantages e.g. saving time and costs. Thus, the PA Management department at the MNET needs to pay its attentions to improves its material base e.g. equipment and tools.
- It needs to pay attentions to monitor training process and its quality.
- In case, when appropriate national academic institutions are not selected, international training needs to be selected and applied.
- Educational background degrees and incentives shall be issued to PAA senior officials, specialists and rangers based on appraisals and evaluation results from training program.
- It needs to annually assess training needs and training process and seek for improvement of training quality.
- Environmental projects and programs implementing in the country need also integrate their training programs with this training programme.

## **2. Regarding FUNDING:**

- The MNET need to estimate and approve annual budgets required training program and seek for fundraising.
- The PA Management department of MNET will provide general guidance to the environmental projects and programs implementing in the country and raise fundraising and cost sharing opportunities to delivery of training programme as planned.
- PAA specialists and rangers will pay certain amounts of tuition fees of credit hours of training programme by themselves. They will be obliged to pay 30 per cent of tuition fee.