**Promotion of Eco-Corridors in the Southern Caucasus Region**

**Terms of reference**

**Monitoring Expert**

# Background, Aim and Outputs of the Project

The “Eco-corridors Programme in the Southern Caucasus” is implemented in Armenia, Azerbaijan and Georgia by the World Wide Fund for Nature (WWF) Caucasus Programme Office with funds provided by the German Federal Ministry for Economic Cooperation and Development (BMZ) through KfW Development Bank. Additional components of the programme are funded by Slovenia and Switzerland. The consortium of GOPA Consultants and DFS are providing consulting services for implementation under the German funding.

The project “Promotion of Eco-Corridors in the Caucasus II” (“The Project”, ECF II) follows the first phase of ECF Programme that was implemented between 2015 and 2020. The design of the Project is based on experiences and lessons learnt from the project “Promotion of Eco-Corridors in the Southern Caucasus” (BMZ No. 2012 3656 1) (“ECF I”).

The objective of the project is to support communities in establishing sustainable land use in selected eco-corridors in Georgia, Armenia and Azerbaijan and thus to contribute to interlinking protected areas and enhancing their ecological stability. The Project provides long-term financial means for community-based natural resources management within ecological corridors and improve the socio-economic situation of the local communities in these corridors. This is to contribute to the objective of the overall Environmental Programme of German Development Cooperation with the South Caucasus: “The natural livelihoods of the rural population are preserved through the protection and sustainable use of natural resources. Biodiversity is preserved through improved habitat protection. Climate protection has been improved by expanding renewable energies and increasing energy efficiency.” More information can be found at <https://www.ecfcaucasus.org/>.

Expected project outputs are:

Output 1: Ecological corridors and interventions sites are identified with consent of local government and communities.

Output 2: Community conservation agreements are concluded based on participatory and sustainable land-use plans.

Output 3: Capacities of land users at local, regional and national level for implementing the sustainable land use as developed in the conservation agreements is strengthened.

Output 4: A sustainable and results-oriented financing mechanism for the establishment of ecological corridors is developed and functional, including a robust monitoring concept.

More detailed information on the scope of the project are included in the Terms of Reference and Logical Framework attached as Annex A and B to this document.

# Development of the MONITORING concept

## Monitoring in ECF I

During the first phase of ECF, the following indicators were selected to monitoring the progress and the impact of the ECF Programme:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **PROGRAMME IMPACT LEVEL** | **SPECIES / LOCATION** | **BASELINE 2016/7** | **STATUS 2019** |  |
| The population of selected indicator species in protected areas which are interlinked through eco-corridors remain constant by2020. | Bezoar goat, Areni AM | 75 |  | The first programme impact level indicator is verified by monitoring of species. Baseline levels for target species were acquired in selected areas within each corridor through zoological studies in 2016 and 2017. Next such studies are scheduled for 2022 and 2023. In 2019 expert assessment of the trends was made based on reported observations by the caretakers. In several areas the process of regeneration of target species population has already started. Some of this early success is not related only to the project and is also not yet scientifically confirmed. However, there are encouraging examples demonstrating a mindset change. In the future, the monitoring tools (mobile app, camera traps, expert assessments, community assessments) will show to what extent the species population is growing or remains constant. According to conservation specialists, if hunting/poaching is brought under control the regeneration of target species will be successful. |
| Bezoar goat, Gndasar AM | 100 |  |
| Bezoar goat, Artavan | 20-30 |  |
| Bezoar goat, Shahaponq AM | 100 |  |
| Mouflon, Areni AM | Occasional | - |
| Mouflon, Gndasar AM | Occasional |  |
| Mouflon, Artavan AM | Occasional |  |
| Mouflon, Shahaponq AM | 10-20 |  |
| Leopard, Southern LesserCaucasus AM | 0 | 1 |
| Tur, Zakatala AZ | 300-500 |  |
| Tur, Khinalig AZ | 570-600 | - |
| Tur, GonaghkendKhinalig AZ | 50 |  |
| Chamois, Khinalig AZ Zakatala | 100 |  |
| Chamois, Khinalig Khinalig AZ | 0 | - |
| Chamois, Gonaghkend Khinalig AZ | 0 | - |
| Red deer, Zakatala Khinalig AZ | 50 | - |
| Red deer, Khinalig Khinalig AZ | 0 | - |
| Red deer, Gonaghkend Khinalig AZ | 0 |  |
| Chamois, Adigeni GE | 0 |  |
| Red deer, Adigeni GE | 4-21 |  |
| Brown bear, Adigeni GE | Stable population |  |
| The number of conflicts between local communities and protected area administrations in protected areas which are interlinked through ecological corridors do not increase (as compared with 2012). | The second programme impact indicator aims at the reduction of conflicts between the local communities and the state run Protected Areas (PAs). This indicator does not apply to ECF in strict sense, as ECF does not work with communities directly linked to PAs.The community conservation in areas adjacent to PAs or in the same region reduces the scope for conflicts by communities taking responsibility for conservation management themselves as opposed to a state institution changing their traditional land use rights. Community involvement also increases the general awareness and value of nature conservation.However, in practice there are also signs of a 'competition for more effective conservation' between the community areas and the neighbouring PAs, putting pressure on the PAs. In one case, tensions between a CA and a National Park (NP) have lately emerged due to the motivation of ECF caretakers to also monitor encroachment into the NP areas and inform NP management, environmental inspection and ministry level, thus creating uncomfortable situations for the park rangers and administration. The situation needs to be monitored and actively mediated in order not to escalate or end up in a blame game but result in fruitful cooperation. |
| **OUTCOME LEVEL:**  |
| In selected ecological corridors, 70% of local development plans corresponding to environmentally friendly land use practices are implemented. | Number of Number of The outcome level indicator (long term 7- prepared local Implemented % 10 years) refers to 70% success rate ofdevelopment local development agreements (a certain number of com-plans plans 2020 munities can be expected to drop-out  |
| 20 19 95 | due to internal community conflicts/politics or mismanagement). At the end of set-up phase 20 Conservation Agreements had been signed. Out of these one has not started implementation due to disagreements within the village community. |
| Output level: |  |
| Long-term commitments to the target group are made for at least 40% of the available financial means for the promotion of the sustainable use of natural resources. | ECF Disposition Actual commit- %Fund ment in CA | The indicator aims at securing a reasonable ratio between the total funds available for the purpose and the funds committed to the long term agreements. Out of five million EUR available as Disposition fund for the purpose of ECF, 3,27 million have been committed to long term conservation agreements, which is 65 %. |
| € 5.027.452 € 4.334.865 65 |
| All measures agreed upon are based on land use plans. | Number of Number of measures in measures % land use plans agreed | Land use plans have been drawn up in a highly participative manner considering historical and current land use as well as habitat requirements of key indicator species. Because of this, land use plans have been fully acceptable to communities. They formed the basis for the long term conservation agreements and are integrated in them. Consequently all measures agreed are based on land use plans. |
| 110 110 100 |
| 70% of the measures agreed upon in the CA are implemented. | Number of Number ofmeasures measures %agreed implemented | The CA have a time span of between seven and ten years. To what extent measures are implemented in line with CAs will become obvious in the next years. So far all measures in active CAsare being implemented. |
| 110 102 93 |
| At least 10% of the financial resources available to the ECF in 2017 are from sources beyond BMZ. | Total funds Total funds available to ECF available to ECFfrom BMZ 2015- from donors % 2020 other than BMZ2015-2020 | The indicator of 10% co-financing is reached with the approval of Slovenian Centre for International Development and Cooperation (CMSR) in late 2019 and includes initial co-funding by WWF Ger- many and co-financing of projects inArmenia through UNDP-GEF SGP and SDA / SDC-Programme. |
| € 8.000.000 € 1.093.540 12 |

To acquire the values of these indicators the following approaches have been taken:

* Available geographically determined databases (land cover, topography, administrative units, land cadastre, infrastructure…) integrated into a GIS,
* Baseline zoological studies to determine the initial status of target animal species in each corridor, conducted once in selected areas within each corridor,
* Integration of a schedule of monitoring and reporting requirements in each long term Conservation Agreement. The Community based organisations are obliged to report annually on their performance of conservation measures included in the habitat management plan, as well as on some of the indicators related to the impact on nature (e.g. observations of target species). WWF will annually review the performance of the CA, follow up on the community engagement and discuss potential issues with the communities, and perform a financial or technical audit when and where deemed necessary.
* Development and use of the smartphone application (Earthbeat in AM and GE, Wildwatch in AZ) combined with a web based database as the technical backbone of the system. Data collection in the field is conducted by the staff of the beneficiary organisations using smart phone survey and maps individualised to each conservation agreement.

One of the key findings of the ECF was that the level of biodiversity monitoring in the region is quite low both in terms of coverage of species and habitats and in terms of available expertise to conduct the monitoring. So far, monitoring is mainly limited to individual research or assessment projects conducted by a limited number of domestic scientists and experts or even by international experts. Also the monitoring of implementation of nature conservation and its impacts is very limited. In both fields WWF is a leading organisation with a significant set of data, studies, maps and other forms of information gathered over the years.

WWF also cooperates closely with the few existing specialists in these fields in South Caucasus and has been involved in initiatives to improve biodiversity monitoring through the ECF, TJS, the leopard conservation projects and others.

The capacity of the CBOs (beneficiaries of the conservation agreements) for reporting and monitoring activities was very low, and they could not be expected to develop and implement the required monitoring and reporting system by themselves. This means that the system needed to be designed in a way that the data collection is simple enough to be done by the CBO members/caretakers, organised in a way that secures positive motivation and is not burdensome, that the data transmission, storage, validation and analysis is efficient, robust and reliable, and that the reporting is standardised as much as possible. Monitoring and reporting needs to be cost effective and needs to be useful for multiple purposes both within the WWF and within the CBOs.

To enable such monitoring system, the Project has elaborated a smartphone application with web-based database for GPS based reporting of field observation observations based on the scope of indicators for each Conservation Agreement. The application can be operated with a smart phone and has been successfully tested In Armenia. It is being introduced in Georgia and Azerbaijan.

## Monitoring in ECF II

For the second phase of ECF, the following Result Matrix with indicators has been agreed:

|  |  |  |
| --- | --- | --- |
| **Goals** | **Indicators** | **Sources of information** |
| **Development cooperation program objective:**The natural livelihoods of the rural population are preserved through the protection and sustainable use of natural resources.Biodiversity is preserved through improved habitat protection and sustainable use of natural resources.Climate protection has been improved by expanding renewable energies and increasing energy efficiency. | **Programme objective indicator 2**On at least 370,000 hectares, sustainable and biodiversity-friendly land and resource use is carried out based on newly introduced management concepts.Base value 2018: 0Target value: 370,000 hectaresActual value: around 109,481 hectares**Programme objective indicator 3**The population of indicator species in selected protected areas remains at least stable.Base value: Occurrence of indicator species in the base years 2015- 2017.Target value: No reduction in the populations of the indicator species.Actual value: no indication of population reduction**Programme objective indicator 4**Three high-level forums cross-national initiatives such as RECC or ECO Regional Conservation Plan (conferences, symposia; participation at vice-ministerial level; participation of Armenia, Azerbaijan, Georgia and possibly other countries) recommend concrete measures to address regional problems for sustainable use and protection of natural resources.Base value: 0Target value: Concrete recommendations for action from 3 regional forums.Actual value: Revised Ecoregional Conservation Plan with action plan for the achievement of a total of 13 goals is available.Predictably achievable in runtime: yes**Programme objective indicator 6**The knowledge and attitudes of the population in German DC intervention areas on the importance of natural resources and their ecosystem services, as well as on biodiversity and climate issues, have improved by at least 1 point on a scale of 1-10.Base value: no base value, because of ex-post evaluationTarget value: +1Actual value: Data collection is ex-post | Official websites of the partners, documentation of the testing/introduction;Membership figures and statistics of resource users/ associations.WWF monitoring reports on compliance with legally binding environmental protection agreements with partner communitiesPartners' biomonitoring systems; WWF monitoring reportsMinutes, decision papers, documents of national intersectoral committees.Result reports on the corresponding survey studies |
| **Objective** | **Indicators** | **Sources of information** |
| **Module objective**The project is intended to provide long- term financial resources for the benefit of ecologically sustainable land use and an improvement of the socio-economic situation in selected ecological corridors, which serves the connection and ecological stabilization of protected areas. | **Module objective indicator 1:**Distribution of indicator species: At least 80% of the participating communities report the presence of indicator species on their territory (using the Earth-beat-App as a standardized monitoring tool).Base value: 0%Target value: 80% Actual value:**Module objective indicator 2:**The population of indicator species increases by 20% in the survey area.Base value: Populations of indicator species within the selected ecological corridors in 2016/2017 (Bezoar goats, mouflon, ibex, chamois, red deer, brown bears).Target value: +20%. Actual value:**Module objective indicator 3:**Total area that is used sustainably in accordance with community conservation agreements.Base value: 0%Target value: 120,000 ha Actual value:**Module objective indicator 4:**Total area designated as protected core zones.Base value: 0%Target value: 25,000 ha Actual value:**Module objective indicator 5:**At least 80% of the communities supported implement measures to improve the living conditions in their villages and to protect the indicator species and their habitats in accordance with community conservation agreements.Base value: 0%Target value: 80%. Actual value:**Module objective indicator 6:**The sustainably used and protected landscapes of the intervention area are preserved as carbon sinks.Base value: approx. 240,000 t CO2eq Target value: approx. 240,000 t CO2eq Actual value: | Protocols of the bio-monitoring systems (e.g. "earth-beat-APP")Scientific studies (periodic investigations in selected areas)Monitoring reports of community organizations; ECF reportingLand use plans according to the community conservation agreements.Monitoring reports of community organizations; ECF reportingReporting ECF |
| **Expected Outputs** | **Indicators** | **Sources of information** |
| Output 1: Ecological corridors and intervention areas are identified with the agreement of the local administrations and the population. | **Indicator 1.1:** Area identified as suitable priority habitat for the indicator species in the selected ecological corridors based of scientific information.Base value: 0 haTarget value: 300,000 ha Actual value:**Indicator 1.2:** Number of municipalities within the eco-corridors with which the project cooperates.Base value: 0 municipalities Target value: 45 communities Actual value:**Indicator 1.3:** Total area for which the traditional use rights of communities have been clarified and mapped in a participatory process.Base value: 0 haTarget value: 150,000 ha Actual value: | Scientific studiesReporting ECFLand Use Register / Cadastre |
| Output 2: Nature conservation contracts are concluded and financed based on participatory land use plans. | **Indicator 2.1:** Number of community conservation agreements signed with the local population after prior informed consensus-building.Base value: 0Target value: 30 community conservation contractsActual value:**Indicator 2.2:** At least 50% of the areas with registered use rights in favor of the communities are part of the sustainable land use plans.Base value: 0%Target value: 50%.Actual value:**Indicator 2.3:** At least 25% of the area included in the land use plans is designated as protected core zones.Base value: 0%Target value: 25%.Actual value: | Community Conservation AgreementsLand use plans of community conservation agreements vs. cadastre entriesLand use plans of the community conservation agreements |
| Output 3: Land users at local, regional and national level have enough capacities for the implementation and monitoring of community conservation agreements. | **Indicator 3.1:** At least 90% of the so- called ‘Community Based Organizations’ (landscape conservation associations) use the "Earth-beat-App" as a monitoring tool (e.g. for the documentation of wildlife sightings).Base value: 0%Target value: 90% Actual value:**Indicator 3.2:** At least 30 of the so- called ‘Community Based Organizations’ (landscape conservation associations) are legally registered for the purpose of community-based sustainable natural resource use.Base value: 0Target value: 30Actual value:**Indicator 3.3:** 100% of the communities in which so-called "human-wildlife conflicts" occur, apply prevention measures and/or compensation mechanisms.Base value: 0%Target value: 100%Actual value:**Indicator 3.4:** At least two measures from the action plan of the "Ecoregional Conservation Plan" are implemented in each of the partner countries with reference to the eco- corridors.Base value: 0Target value: At least 2 measures per countryActual value: | Monitoring reports of community organizations; ECF reportingStatutes and register excerptContractual regulations and protocols for the implementation of prevention measures and/or the application of compensation mechanismsReporting ECF; MoU with partner governments |
| Output 4: A sustainable and results- oriented financing mechanism for the creation of eco-corridors is developed and functional, including a robust monitoring concept. | **Indicator 4.1:** At least 50% of the communities succeed in raising additional funds from other sources.Base value: 0%Target value: 50% Actual value:**Indicator 4.2:** Number of other donors who contribute to the "Eco-Corridor Fund" (ECF) in addition to the German development cooperation.Base value: 1Target value: 3 Actual value:**Indicator 4.3:** A standardized catalogue of measures as well as the payment modalities for ecosystem services have been agreed and are publicly available.Base value: n.r.Target value: Public access guaranteed (e.g. via webpage)Actual value:**Indicator 4.4:** At least 80% of community organizations submit monitoring reports, including financial reports, on time.Base value: 0%Target value: 80%. Actual value: | Monitoring reports of community organizations; ECF reportingECF reporting; cooperation agreements with other donorsWebpage of the ECFMonitoring reports of community organizations; ECF reporting |

During the ECF II, WWF, with the support of the Consultant, is developing and implementing a robust monitoring concept for the wider area (corridor) of the concluded Community Conservation Agreements during ECF I and ECF II that would be compatible with the existing and future national monitoring systems. This means that the indicators for both phases of the ECF need to be included. This concept will include the monitoring of ecological as well as socio-economic data:

* Adherence to agreed land use by communities based on the Community Conservation Agreements,
* Land cover and land use changes,
* Range and population numbers of relevant indicator species in the relevant ecological corridors,
* Development of livelihood / economic benefits in target communities.

The ECF 2 has to prove what impact CAs have on the landscape in terms of biodiversity restoration, livelihoods and economic benefits, and climate change adaptation/mitigation. Land-users and caretakers will therefore be trained and encouraged to use standardized monitoring approaches, including the EarthBeat (WildWatch) smart phone application as well as camera traps. The information gathered through these approaches will be centrally collected, analysed and used for monitoring the effectiveness of the Community Conservation Agreements and for reporting to KfW along the indicators specified above. WWF will establish a Monitoring Framework centred around a Web-based GIS platform to collect, analyse and report all relevant data related to the Project and the Community Conservation Agreements specifically.

Separate from the data collection and reporting by the beneficiaries, scientific surveys of the selected indicator species are implemented periodically in selected corridor areas to establish baselines and indicate scientifically justified trends of indicator species in these areas.

In addition to this, the feasibility of implementing elements of “Remote Management, Monitoring and Verification” (RMMV) will be checked. Primary option is using satellite data time series to track the changes in area and management of habitats, which could be linked to locally collected data from EarthBeat to improve the accuracy and timeliness of information.

EarthBeat smartphone application and database (and its equivalent Wild Watch in Azerbaijan) was developed in the later stages of the ECF 1. It was fully implemented and is being used in Armenia, while in Georgia and Azerbaijan the user training and implementation is to be completed. The experience with Earth Beat in Armenia will be reviewed and based on this the process of implementation in Georgia and Armenia will be designed and finalised with the existing CAs. The same process will be implemented for all new conservation agreements as part of the initial capacity building. Other monitoring methods, such as use of camera traps or permanent sample plots for plant abundance and diversity, will also be assessed and implemented as appropriate. Equipment including smartphones, computers, camera traps and others will be procured and provided to the CBOs and their caretakers. The EarthBeat application (and its Azerbaijan equivalent) will be developed further as the monitoring requirements develop and to reflect the development in the supporting platforms (e.g. new models of mobile phones).

However, the Earthbeat application is the tool to record data only and will need a system to process them and turn them into useful information for decision makers at different levels.

 A Monitoring Framework for planning, implementation and monitoring of conservation measures including a web-based GIS application is to be developed. The Framework and the application should combine the available geographic information (existing maps, satellite data, land tenure databases, forest management plans, species observation data, territorial statistical data…), the outputs of preparatory activities such as habitat suitability analysis and socio-economic information and the inputs from the data collection using EarthBeat and other methods. The purpose of the application will be to support the planning process at the start, later serve the day-to-day implementation and provide the framework for monitoring, or in other words provide the “RMMV” capability.

# Scope of work

The tasks of the Monitoring Expert are:

* Develop an understanding of the methods used and progress made so far in developing the monitoring and reporting system for the ECF.
* Develop an understanding of the demand for the outputs of monitoring by different users (stakeholders) including KfW, WWF, beneficiaries including Community based organizations and their caretakers, scientists, as well as local regional and national authorities.
* Review the individual methods and tools used so far, looking at their cost (monetary and labour), comprehensiveness, including the gaps, delays, weaknesses, and limitations of method(s) applied, quantity and quality of data and opportunities to integrate the data in the expected web-based application.
* Identify and review potential new methods and tools needed for a complete monitoring system with the indicators to be reported (including beyond those set by ECF). It should include remote sensing data acquisition and analytical tools (e.g. automatic classification of camera trap data). The review should look at the cost of methods and tools (monetary and labour), comprehensiveness, quantity and quality of data, opportunities to integrate the data in the expected web-based application and overall feasibility.
* Review existing experiences of running conservation maonitoring platforms in other regions of the World.
* Make recommendation regarding improvement or modification of existing methods and tools as well as on the selection of future tools to be used.
* Jointly with ECF Team, develop the Conceptual Monitoring Framework esponding to the requirements listed above based on the analysis of demand for information, existing and potential methods and tools.
* Assess the available and needed capacity (staff, equipment), cost and main challenges (technical, institutional, legal…) of the implementation of the proposed concept.
* Prepare one or more sets of Terms of Reference for the implementation of the proposed concept.
* Prepare a work-plan at the start of the assignment including a list of activities, participation of ECF team, beneficiary staff and other stakeholders needed and time schedule.
* Develop a draft report with the findings and recommendations.
* Present the draft report to the ECF Team.
* Prepare the final report including the relevant ToRs.
* Regularly communicate and coordinate with the ECF CTA, National Coordinators and WWF.
* Other unforeseen tasks as needed in agreement with the CTA and GOPA backstopper.

# Time schedule and reporting

1.

The assignment is planned between November 15, 2022 and March 31, 2023. The expected time input in this period is 3 work months in the project region and at home office. Estimated input in days (one work month consists of 22 workdays):

|  |  |
| --- | --- |
| **Task** | **Total** |
| (days) |
| Develop the work plan | 5 |
| Three country visits to develop understanding of the demand and the existing methods and tools | 18 |
| Identification and review of potential future methods | 8 |
| Recommendations on existing and future methods | 5 |
| Development of the monitoring concept involving the ECF Team | 7 |
| Capacity and cost assessment | 5 |
| Preparation of ToRs for implementation | 7 |
| Draft Report and presentation | 6 |
| Final report | 5 |
| **Total** | **66** |

The Monitoring Expert reports to the Chief Technical Adviser.

# Deliverables

Expected deliverables and tentative deadlines:

* Workplan: November 2022
* Workshop with the ECF Team to present recommendations and develop the concept: February 2023
* Draft Report: March 2023
* Final Report: March 2023

Deadlines may change based on the modifications of the work plan and actual progress in project implementation.