

Annex 2k

Calculation of the adaptation impact

to the GCF Funding Proposal (Simplified Approval Process)

ALBAdapt – Climate Services for a Resilient Albania

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Version 2

Submitted by:

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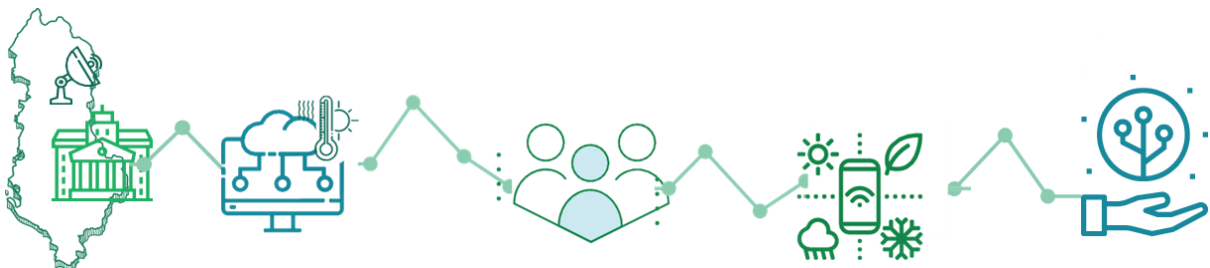


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1. Introduction

This Annex document provides supplementary information on the calculation of the adaptation impact presented in Section D.1.1 of the Funding Proposal and Annex 2a (Logical Framework). Specifically, it presents the methodology used to estimate the targets of Core Indicator 2 – ARA 1 as well as Supplementary Indicators 2.4 and 3.1.

2. Calculation of relevant Core and Supplementary Indicators

2.1 Core Indicator 2 – ARA 1: Direct and Indirect Beneficiaries Reached

2.1.1 Direct beneficiaries

Target: 700,951 individuals, corresponding to 90% of the coastal population (i.e. people living in the 12 coastal municipalities).

Such individuals will be covered by the multi-hazard early warning system (MHEWS) and will additionally benefit from project-supported preparedness actions, such as local adaptation action plan (LAAPs), capacity building programmes, forecast-based action (FbA) pilots, school emergency plans, ecosystem-based adaptation (EbA) / ecosystem-based disaster risk reduction (eco-DRR) measures, etc. The figure of 90% is chosen as a conservative estimate of the population that will receive such benefits: i.e. 10% of the coastal population is assumed (i) to be incapable of receiving early warnings through broadcast media (TV and radio), the internet or mobile devices, and/or (ii) to be unwilling to adopt any form of precautionary action or behavioural change as a result of receiving warnings, receiving awareness-raising or capacity building support, or as a result of improvements to municipality or community readiness (e.g. disaster risk reduction (DRR) and emergency plans, improved communication channels, improved hazard response, etc.). It should be emphasised that the 10% estimate of individuals unable or unwilling to take precautionary action is, for reasons of conservativeness, set deliberately high. Conversely, the 90% beneficiaries estimate is considered to be highly conservative.

2.1.2 Indirect beneficiaries

Target: 1.82 million individuals, corresponding to 90% of the remaining national population: i.e. 90% of individuals living in all other municipalities.

These individuals will benefit from national structures and systems – such as the national meteorological and hydrological service (NMHS), the national framework for climate services (NFCS) and the MHEWS – put in place with project support, but they are assumed not to benefit directly because ‘on the ground’ project interventions (such as capacity building, LAAP development, FbA pilots, etc.) are not targeted at them. Again, the 90% figure is adopted as a highly conservative estimate, to exclude individuals who somehow evade any project adaptation benefits.

Table 1 summarizes the calculation for both direct and indirect beneficiaries.

Table 1: ARA 1 Beneficiaries

Area	Population		Project Beneficiaries		
	Women	Men	Women (90% of total)	Men (90% of total)	Women and Men (90% of total)
<i>Coastal Municipalities</i>					
Divjakë	16,974	17,280	15,277	15,552	30,829
Durrës	86,576	88,534	77,918	79,681	157,599
Fier	59,788	60,867	53,809	54,780	108,590
Himarë	2,862	2,876	2,576	2,588	5,164
Kavajë	20,318	19,776	18,286	17,798	36,085
Konispol	4,113	4,132	3,702	3,719	7,421
Kurbin	23,342	22,949	21,008	20,654	41,662
Lezhë	33,096	32,537	29,786	29,283	59,070
Rrogozhinë	11,224	10,924	10,102	9,832	19,933
Sarandë	10,090	10,137	9,081	9,123	18,204
Shkodër	69,520	66,092	62,568	59,483	122,051
Vlorë	52,289	52,538	47,060	47,284	94,344
Coastal Total (direct beneficiaries)	390,192	388,642	351,173	349,778	700,951
<i>Rest of the Country</i>					
All other municipalities (indirect beneficiaries)	1,015,937	1,009,980	914,343	908,982	1,823,325

2.2 Supplementary Indicator 2.4 – Beneficiaries (Female / Male) Covered by New or Improved EWS

Target: 2,524,276 individuals, corresponding to 90% of the total population.

GCF Supplementary Indicator 2.4 on early warning systems defines beneficiaries as individuals residing within an area covered by an early warning system supported by GCF-funded interventions and which can receive early warning information.

A fully functional early warning system (EWS) is defined by the Sendai Framework as consisting of four key elements (see Table 2). Thus, calculation of Supplementary Indicator 2.4 involves two considerations: (i) whether the project-supported EWS can be considered 'fully functional' in the context of the Sendai definition, and (ii) the population coverage of the EWS.¹

With regard to the first consideration, the project will lift the Albanian EWS from the current situation of low functionality to one of high functionality. Thus, for the purposes of calculating Supplementary Indicator 2.4, the EWS can, in its envisaged form, indeed be considered fully functional.

¹ GCF (2022), *Integrated Results Management Framework: Results Handbook*:
<https://www.greenclimate.fund/sites/default/files/document/draft-results-handbook-v11-01092023.pdf>

Table 2: EWS Functionality

Key EWS Elements (Sendai Framework)	Current Situation	Project Expected Results	
		Mid-Term	Final
1. Disaster risk knowledge based on the systematic collection of data and disaster risk assessments	<p>All meteorological stations are in a poor state; three-quarters are manually operated; 95% of manual stations and 100% of automatic stations need to be replaced, repaired or recalibrated.</p> <p>Over three-quarters of hydrological stations are manual; 95% of manual stations and 100% of automatic stations need to be replaced, repaired or recalibrated.</p> <p><i>Level - Medium</i></p>	<p>The meteorological and hydrological stations have been repaired or recalibrated, or have been procured and installation has started.</p> <p><i>Level – Medium</i></p>	<p>The stations are operational and systematically collecting data.</p> <p><i>Level – High</i></p>
2. Detection, monitoring, analysis and forecasting of the hazards and possible consequences	<p>Hydro-meteorological and hazard forecasting capabilities are very limited.</p> <p><i>Level – Low / Medium</i></p>	<p>Technical assistance, capacity building and hardware / software is provided for forecasting, augmented by support for IbF and FbA.</p> <p><i>Level - Medium</i></p>	<p>Forecast bulletins are improved (quality, timeliness, geographical relevance)</p> <p><i>Level - High</i></p>
3. Dissemination and communication, by an official source, of authoritative, timely, accurate and actionable warnings and associated information on likelihood and impact	<p>Warnings are of limited quality (high rate of false positives) and are disseminated by different institutions, with limited coordination; IGEO issues warnings only for floods and forest fires (and not drought, heat, cold, etc.); warning dissemination is unsystematic and does not include mobile devices.</p> <p><i>Level – Low / Medium</i></p>	<p>Institutional roles and responsibilities within the MHEWS architecture have been formalised through the MHEWS Policy and associated SOPs. The AlbaMet Alert platform is under development, providing a unified warning system.</p> <p><i>Level – Low / Medium</i></p>	<p>AlbaMet Alert is fully functional and has been tested, NEBS arrangements have been formalised, and alerts can be sent to mobile devices in geographically-targeted areas.</p> <p><i>Level - High</i></p>
4. Preparedness at all levels to respond to the warnings received	<p>Limited awareness and preparedness.</p> <p><i>Level - Low</i></p>	<p>Information and preparedness campaigns have been prepared and some implemented.</p> <p><i>Level - Medium</i></p>	<p>All information and preparedness campaigns have been implemented, accompanied by targeted campaigns in the coastal belt.</p> <p><i>Level – Medium / High</i></p>
Average level	Low	Medium	High
GCF Guidance	0	1	2

With regard to the second consideration, this refers to individuals who receive or will receive early warning information. The estimate of project impact is based on the project target to establish a multi-modal alert system (AlbaMet Alert), spanning television, radio, internet and mobile telecommunications. Albanian citizens already receive warnings through television, radio and internet, albeit warnings that are of inferior quality, slower, less standardised and considerably more institutionally fragmented than those that the ALBAdapt project will enable. Warnings disseminated through the mobile telecommunications network will, however, be a genuinely novel output of the project. Therefore, to adopt a (highly) conservative estimate of the beneficiaries covered by the ‘new or improved EWS’, only the coverage of mobile warnings will be considered.

Mobile phone penetration in Albania is 122%, meaning an average of 1.22 mobile phones per capita.² Network coverage of Vodafone is 99.7% of the population and 99.4% of Albanian territory, and 98.9% (population) and 98.6% (territory) for One Mobile.³ Both mobile phone penetration and network coverage therefore suggest close to universal reach for mobile warnings. However, for reasons of conservativeness, 90% population reach is assumed. Supplementary Indicator 2.4 therefore has a value of 2.5 million beneficiaries, consisting of approximately 1.25 million women and 1.25 million men (see Table 3).

Table 3: Beneficiaries Covered by a New or Improved EWS

Population in Coastal and Non-Coastal Municipalities			
Municipalities	Total	Female	Male
Coastal	778,834	390,192	388,642
Non-Coastal	2,025,917	1,015,937	1,009,980
TOTAL	2,804,751	1,406,129	1,398,622
90%	2,524,276	1,265,516	1,258,760

2.3 Supplementary Indicator 3.1 – Change in expected losses of economic assets due to the impact of extreme climate-related disasters in the geographic area of the GCF intervention

Target: Euro 2.5 million per year avoided climate damage losses

GCF Supplementary Indicator 3.1 estimates losses in relation to the functional geographical area associated with a GCF-funded project. In the case of the ALBAdapt project, which will put in place a national Climate Information and Early Warning System (CIEWS), the geographical area relates to the entirety of Albania.

As stated in the GCF IRRMF Results Handbook, the value of this indicator is considered to be a rough approximation due to the uncertainties in quantification and challenges associated with data availability. Also in line with the methodology outlined in the Handbook, historical data and third-party (World Bank) cost-benefit analysis is used to estimate the value of the indicator.

Estimation of Indicator 3.1 for the ALBAdapt project utilises the project's economic modelling (Annex 10). Not only does this ensure internal consistency of project assumptions and expectations, it ensures that the indicator estimation is grounded in robust research from credible sources.

The economic benefits arising from the restructuring of the CIEWS stem primarily from avoiding the damage costs associated with climate hazards. The IMF estimates that natural disaster losses in Albania averaged ~Euro 18.8 million per year in the period 1980-2021.⁴ The World Bank estimates natural disaster losses of ~Euro 22.4 million per year.⁵ The NAP provides an annual estimate of ~Euro 35 million.⁶ Other sources provide considerably higher estimates.⁷ The economic analysis uses an

² Datareportal (2023), *Digital 2023: Albania*: <https://datareportal.com/reports/digital-2023-albania>

³ OpenSignal (2023), *Albania Mobile Network Experience Report*: <https://www.opensignal.com/reports/2023/10/albania/mobile-network-experience>

⁴ IMF (2022), *Albania: Selected Issues*: <https://www.elibrary.imf.org/downloadpdf/journals/002/2022/363/002.2022.issue-363-en.pdf>

⁵ World Bank (2008), *Strengthening the Hydrometeorological Services in South Eastern Europe*: https://www.preventionweb.net/files/7650_StrengtheningHydrometeorologicalSEE1.pdf

⁶ Republic of Albania (2021), *National Adaptation Plan for Climate Change in Albania*: https://unfccc.int/sites/default/files/resource/National_Adaptation_Plan_Albania.pdf

⁷ For example: World Bank (2019), *Climate-Resilient Road Assets in Albania*: <https://openknowledge.worldbank.org/bitstream/handle/10986/31616/Climate-Resilient-Road-Assets-in-Albania.pdf?sequence=1&isAllowed=y>; Cinaj, V. and Ribaj, R. (2021), 'Macroeconomic impact of natural disasters in Albania', *Ovidius Economic Sciences Series*, 21: <https://stec.univ-ovidius.ro/html/anale/RO/2021/Section%201%20and%202/8.pdf>

estimate of Euro 25 million as the annual damage stemming from climate-induced hazards. This is considered to be a conservative damage rate, as it disregards the fact that the frequency and severity of climate hazards are expected to increase in the future.⁸

The World Bank estimates that a functional CIEWS in South-Eastern Europe can be expected to avoid approximately 10% of damage costs arising from climate hazards – i.e. Euro 2.5 million per year for Albania.⁹ This is, therefore, considered the end-of-project target value for Indicator 3.1.

During project implementation, further detailed economic modelling will be undertaken, incorporating updated information, recent additions to the scientific literature and empirical data from project activities. If the target value for the indicator is revised as a result, the re-estimated figure will be reported to the GCF via annual reporting (as per the guidance in the IMRF Results Handbook).

⁸ Republic of Albania (2022), *Fourth National Communication of the Republic of Albania under the UNFCCC*: https://unfccc.int/sites/default/files/resource/Fourth%20National%20Communication%20of%20Albania%20to%20the%20UNFCCC_EN.pdf?download

⁹ Hallegatte, S. (2012), 'A cost-effective solution to reduce disaster losses in developing countries: hydro-meteorological services, early warning and evacuation', *World Bank Policy Research Working Paper*, No. 6058: <https://openknowledge.worldbank.org/server/api/core/bitstreams/f9fc0526-63bf-5ac0-b690-2b818ebab967/content>