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Food and Agriculture
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Продовольственная и
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Organización de las
Naciones Unidas para la
Alimentación y la Agricultura

منظمة
الغذية والزراعة
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EUROPEAN COMMISSION ON AGRICULTURE

FORTIETH SESSION

Budapest, Hungary, 27 and 28 September 2017

UNFCCC Paris agreement: how do countries' INDCs/NDCs commitments relate to transboundary animal diseases and what does this mean to climate financing

I. Introduction

1. In Europe and Central Asia, climate change is a growing threat to agriculture and food security. Average temperatures across the region have already increased by 0.5 °C to 1.6 °C since the early 1990s (FAO, 2016 a), with an overall increases of 1.6°C to 2.6°C and reductions in precipitation expected by 2050 (World Bank, 2009). These climatic changes as well as the increase frequency and intensity of extreme weather events, such as droughts and floods, are already adversely affecting the productivity and sustainability of agriculture, fisheries and forestry sectors. Climate change will also affect the distribution and frequency of transboundary animal diseases (TADs)¹. This can have major consequences on animal and public health, productivity, food security as well as on livelihoods, in particular of small holders.

2. The following information note will provide a preliminary review on the commitments made by REU member states to the UNFCCC Paris Agreement under their (Intended) Nationally Determined Contributions (hereinafter, (I)NDCs) and how it relates to livestock production systems and in particular to TADs. The document will also review new climate financing mechanisms, in particular the Green Climate Fund (GCF) and what opportunities there are for the livestock sector in addressing future climate change challenges.

¹ See also ECA/40/17/3 (*The effect of climate change on animal diseases, trade and food security in the REU region*), ECA/40/17/4 (*Antimicrobial resistance (AMR): the loss of a major defence to the emerging challenge?*) and ECA/40/17/5 (*Disease occurrence tracking, strategic response to TADs and informed decision making*).



II. Status of (I)NDC commitments and the linkages to TADs in Europe and Central Asia

Status of (I)NDCs commitments of Member Countries in the REU region

3. As of the end of August 2017, 155 of 197 Parties have already submitted their NDCs to the UNFCCC Secretariat. In the REU region, 39 countries have already ratified the Paris Agreement including the European Union and its 28 member states (EU-28). The detailed statuses of Paris Agreement in the REU countries are summarized in Table 1.

Table 1. Status of Paris Agreement in the REU region

Ratification		
Albania, Armenia, Andorra, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Kazakhstan, Latvia, Lithuania, Luxemburg, Malta, Republic of Moldova, Monaco, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Tajikistan, Turkmenistan, Ukraine, United Kingdom		
Approval	Acceptance	Not yet
Denmark, Georgia	Belarus, Iceland, Netherlands	Czech Republic, Kyrgyzstan, FYR Macedonia, Montenegro, Russian Federation, San Marino, Switzerland, Turkey, Uzbekistan

Source: UNFCCC national INDCs/NDCs submissions.

Adaptation goals in (I)NDCs in the REU region

4. FAO has analyzed how the agricultural sectors are reflected in these (I)NDCs under the UNFCCC Paris Agreement (FAO, 2016b) and has identified preliminary priority areas of support (FAO, 2016c). The analysis found that the agriculture sectors (crops, livestock, forestry, fisheries and aquaculture) feature prominently in national mitigation and adaptation goals. In fact, out of the 190 countries that submitted (I)NDCs, 127 countries included agriculture in their adaptation targets (FAO, 2016). More detailed and specific regional and national analysis are now currently being undertaken, including the assessment of potential climate change mitigation and adaptation measures related to agriculture, forestry and fisheries. For the REU region, this more in-depth analysis should be completed by the middle of 2018.

5. In the preliminary analysis that has already been conducted it can be observed that while 9 countries plus EU-28 do not provide details of their adaptation measures in their (I)NDCs, 16 countries have noted that they are developing adaptation plans and targets by extending their existing national strategies on climate change and/or establishing new ones, of which 12 countries actually specifically refer to agricultural sectors as a priority in their adaptation targets².

6. The targets specified vary in scope, for example, Georgia plans research and development of emergency response plans for agriculture dealing with droughts and floods as well as introduction of innovative irrigation management and water application techniques. Uzbekistan will improve the

² Armenia, Belarus, Georgia, Kyrgyzstan, Norway, Republic of Moldova, Serbia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan.

climate resilience of the agriculture through diversification of food crops production pattern, conservation of germplasm and indigenous plant species, including the development of biotechnologies.

7. Meanwhile, Kyrgyzstan and Serbia have highlighted the strong need for adaptation of agricultural sectors from the perspective of economic and social impacts, as the sectors in these countries are vulnerable to climate change. Although, Ukraine and Turkey do not specifically mention focus areas in their (I)NDCs, they do state that adaptation policies and measures will be implemented in all relevant sectors, including the agricultural ones.

8. In the REU region, Republic of Moldova is the only country to indicate the need for adaptation measures in the livestock sector. It indicates interventions such as introduction of resilient livestock species and new nutritional regimes to address climate change impacts such as extreme temperatures. Although not specifically stated in other (I)NDC, it is worth noting that livestock interventions are also likely to be important in other countries as well.

Mitigation goals in (I)NDCs in the REU region

9. In the FAO REU region, absolute GHG emission targets are used by more than 90 percent of the countries (49 out of the total of 53 member countries). Of which 42 countries, including the EU-28 and EFTA countries, adapt ‘Base Year Emissions’ target, which commonly refers to the year 1990 as a base year, except for 5 transition economies³.

10. In addition, there are 7 other countries that set their reduction target below the ‘business-as-usual (BAU)’ level. However some of these countries, for example, Kyrgyzstan and Bosnia and Herzegovina have noted that their targets can only be achieved if the country receives international financial support. In contrast, 4 countries have set their (I)NDCs as intensity targets⁴, i.e. the reduction of GHG emissions per unit of GDP and/or per capita. For instance, Armenia, if financial support from the international community is made available, will try to achieve ecosystem neutral GHG emissions in 2050 (i.e. annual 2.07 tons/per capita). Among others, Republic of Moldova has established an ambitious target to reduce its GHG emissions by 64-67% by 2030 (for a summary of mitigation commitments, see Table 2).

Table 2. REU countries according to the five types of mitigation targets

Base Year Emissions	Reduction Relative to BAU	
Azerbaijan, Belarus, Kazakhstan, Monaco, Republic of Moldova, Montenegro, Russian Federation, San Marino, Serbia, Tajikistan, Ukraine, EU-28, EFTA	Albania, Andorra, Bosnia and Herzegovina, FYR Macedonia, Georgia, Kyrgyzstan, Turkey	
Intensity	Trajectory/Peak	Fixed-level
Armenia, Israel, Turkmenistan, Uzbekistan	N/A	N/A

*Note: **Base year emissions target:** absolute emission reduction targets expressed as an emission reduction below the level in a specified base year. **Reduction relative to business as usual (BAU)** is the reduction of emission below a ‘business as usual’ level or compared to a scenario for the economy-wide mitigation targets. It is also called a Baseline scenario target. **Intensity target:** Intensity target refers to reductions in GHG emissions per unit of gross domestic product (GDP) or per capita relative*

³ In the following countries, a different base year than 1990 is used, namely Bulgaria and Poland use 1988, Hungary uses an average of 1985 to 1987, Romania uses 1989 and Slovenia uses 1986 as base year.

⁴ This intensity target-setting can be observed in emerging economies in Asia as well.

to a base year or absolute level of per capita emissions by 2025 or 2030. **Trajectory/Peak target:** This target specifies the year or time frame in which the respective country's emissions are expected to peak. (UNFCCC, 2015 and Levin et al., 2015). **Fixed-level target:** This target is not linked to a base year, but establish an overall maximum absolute limit on emissions (as for example, carbon neutrality).

Source: UNFCCC national INDCs/NDCs submissions.

11. The agriculture sector is a main sources of GHG emissions, in particular the livestock sector, which contributes 14.5 percent of all human-induced emissions (FAO, 2013). Of the 190 countries which submitted their (I)NDCs, 148 countries include agriculture (crops, livestock) in their mitigation contributions (FAO, 2016). In the REU region, 19 plus the EU-28 have set targets for this sector, but the sub-sectors differ per country and varies from e.g. changing feeding practices and manure management to improving the management of nitrogen fertilizer. A summary of the mitigation sector commitments of REU countries can be observed in Table 3.

Table 3. Targeted sectors of submitted INDCs/NDCs for mitigation in the REU region

Region	Country	Energy	Industrial processes and product use	Agriculture	Waste	LULUF
Caucasus	Armenia	x	x		x	x
	Azerbaijan	x		x	x	x
	Georgia	x	x	x	x	
Central Asia	Kazakhstan	x		x	x	x
	Kyrgyzstan	x	x	x	x	x
	Tajikistan	x	x	x		x
	Turkmenistan	x	x	x	x	
	Uzbekistan *	-	-	-	-	-
European CIS	Belarus	x	x	x	x	
	Republic of Moldova	x	x	x	x	x
	Russian Federation	x	x	x	x	x
	Ukraine	x	x	x	x	x
South Eastern Europe	Albania	x	x			
	Bosnia and Herzegovina	x	x	x	x	x
	Montenegro	x	x	x	x	
	Serbia **	-	-	-	-	-
	FYR Macedonia	x				
	Turkey	x	x	x	x	x
EU-28	EU-28	x	x	x	x	x
EFTA	Iceland	x	x	x	x	x
	Norway	x	x	x	x	x
	Switzerland	x	x	x	x	x
-	Andorra	x			x	
-	Israel	x	x	x	x	
-	Monaco	x	x	x	x	x
-	San Marino	x	x	x	x	X

Note: * Uzbekistan does not clearly mention about its targeted sectors, but put focus on energy efficiency in the INDCs. ** Serbia mentioned about its targeted sectors according to the IPCC 2006 Guidelines and 2013 KP Supplement.

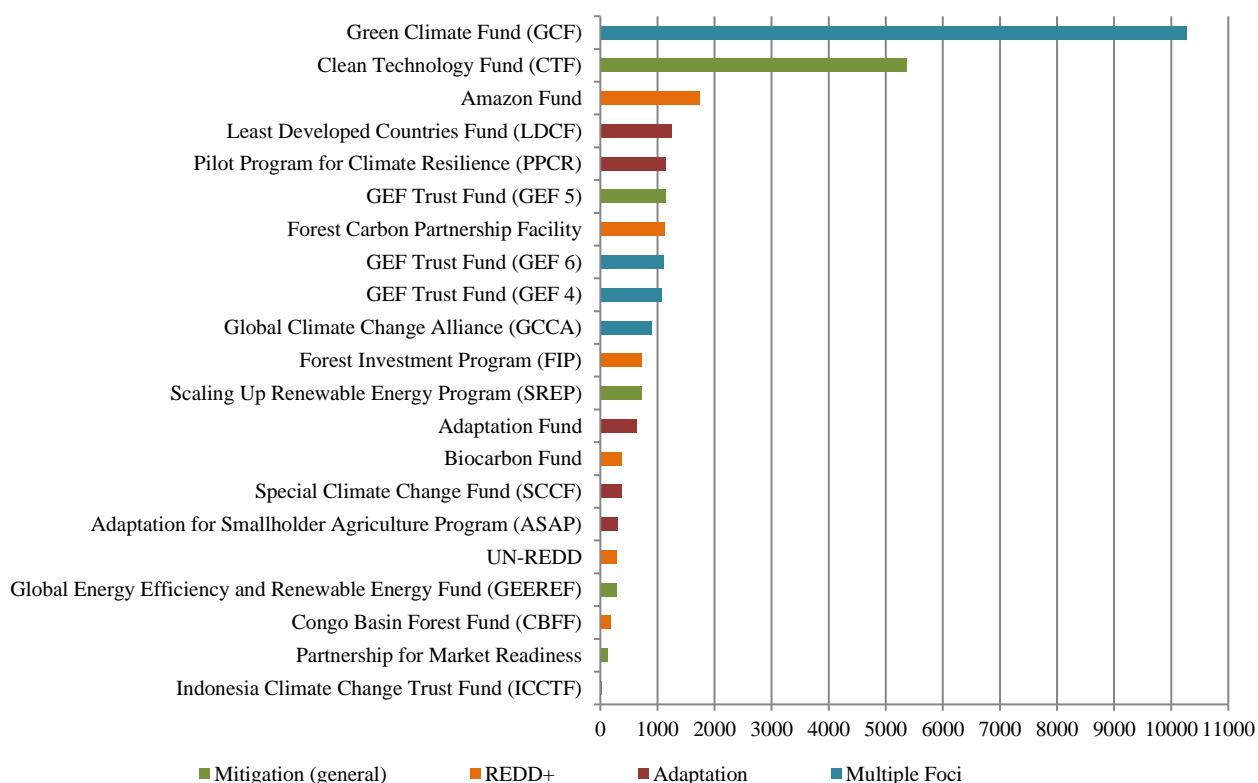
Source: UNFCCC form national (I)NDCs submissions.

12. It should be noted that many of the (I)NDCs are too higher level to specify the needed interventions in the agriculture subsectors. However, in national climate change adaptation plans and FAO dialogues the livestock has often been identified as an important sector which requires both adaptation and mitigation responses, which will include TADs especially considering climate change scenarios⁵.

III. Green Climate Fund mechanism for supporting implementation of NDCs

13. As shown in Graph 1, there are a number of past and current climate financial mechanisms intended to support various adaptation and mitigation interventions, but the relatively recently created Green Climate Fund (GCF) is currently the largest climate fund available. The GCF was established under the UNFCCC to support developing country Parties in achieving their climate change mitigation and adaptation commitments under their (I)NDCs. The fund aims for a 50:50 balance between mitigation and adaptation investments, and at least 50 percent of adaptation funding should go to the most vulnerable countries, including LDCs, SIDS, and African States⁶. Table 4 shows the eight mitigation and adaptation results areas in which the fund seeks to have strategic impacts towards the reduction of emissions and increase in resilience⁷. The GCF's portfolio now consists of forty three projects and programs amounting to USD 2.2 billion in GCF funding for a total value of USD 7.3 billion, with co-financing included. Most of the projects are national or involve two countries, while the remaining four projects are composed for multiple countries. As of May 2017, one-third of approved GCF projects were in the agricultural sectors.

Graph 1. Climate Finance Mechanisms on the ground (Unit: million USD, pledge)



Source: Climate Fund Update, The latest information on climate funds www.climatefundupdate.org/data

⁵ See also ECA/40/17/3, ECA/40/17/4 and ECA/40/17/5.

⁶ <http://www.greenclimate.fund/-/gcf-paradigm-shift-revisited>

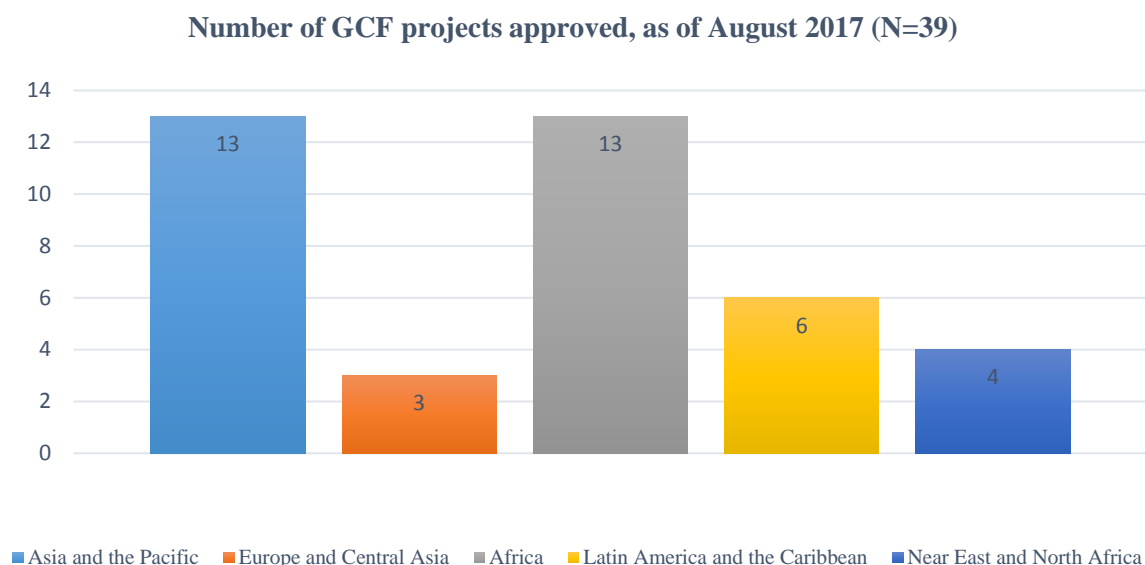
Table 4. Mitigation and adaption funding areas under GCF

Mitigation	Adaptation
<p><i>Reduced emissions from:</i></p> <ul style="list-style-type: none"> • Energy access and power generation (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.) • Low emission transport (E.g. high-speed rail, rapid bus system, etc.) • Buildings, cities, industries and appliances (E.g. new and retrofitted energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.) • Forestry and land use (E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc.) 	<p><i>Increased resilience of:</i></p> <ul style="list-style-type: none"> • Most vulnerable people and communities (E.g. mitigation of operational risk associated with climate change – diversification of supply sources and supply chain management, relocation of manufacturing facilities and warehouses, etc.) • Health and well-being, and food and water security (E.g. climate-resilient crops, efficient irrigation systems, etc.) • Infrastructure and built environment (E.g. sea walls, resilient road networks, etc.) • Ecosystems and ecosystem services (E.g. ecosystem conservation and management, ecotourism, etc.)

Source: made by FAO, referring to GCF Concept Note template (www.greenclimate.fund/how-we-work/funding-projects/fine-print).

14. As shown in the above analysis, many REU countries have made commitments and have identified adaptation and mitigation interventions in agricultural, forestry or fisheries sectors within their (I)NDCs. Under the GCF, there are number of relevant funding areas under both adaption and mitigation. Currently there is a low percentage of projects that have been approved in the REU region (see Graph 2). As the GCF Board has emphasized geographic balance and a reasonable and fair allocation across a broad range of countries⁸, the Europe and Central Asia region is therefore currently a priority region due to the low number of projects so far received. Currently (as of July 2017), there has not been any specific projects on livestock (or fisheries for that matter) that have been approved by the GCF. Proposals covering such themes could therefore be well received (as long as they are fulfilling the GCF investment criteria and are endorsed by the National Designated Authority). In this regard, there may be opportunities for the development of national or possibly regional proposals addressing climate change adaption and/or mitigation measures in the livestock sector, and possibly including emerging TADs due to climate change.

⁸ https://www.greenclimate.fund/documents/20182/239759/3.4_Allocation_of_Fund_Resources.pdf/e717fcd0-3f85-4a5d-81aa-9199c5df4c3d

Graph 2. Breakdown of GCF projects approved

Source: made by FAO, referring to GCF website (www.greenclimate.fund/home).

IV. FAO support mechanisms to member states

15. FAO has more than six decades of experience dealing with climate-related issues (FAO, 2011). The newly launched FAO Strategy on Climate Change reiterates FAO's continued support to its member states in helping to adapt and mitigate to climate change (FAO, 2017). The Strategy aims to achieve three outcomes: (i). Enhanced capacities of Member Nations on climate change through FAO leadership as a provider of technical knowledge and expertise; (ii). Improved integration of food security, agriculture, forestry and fisheries within the international agenda on climate change through reinforced FAO engagement, and (iii). Strengthened coordination and delivery of FAO work on climate change. Globally, the Strategy also positions FAO to contribute to the achievement of the Sustainable Development Goals (SDGs), specifically proposing to undertake efforts contributing to targets under **SDG 1 (No Poverty)**, **SDG 2 (Zero Hunger)** and **SDG 13 (Climate Action)** and with some relevance to several other SDGs, such as **SDG 14 (Life below Water)** and **SDG 15 (Life on Land)**.

16. In this regard, supporting member countries to implement their (I)NDCs is key priority under Objective 1 of FAO's new Strategy on Climate Change. Based on FAO's analysis of the NDCs five intervention areas for support have been identified as: (i). Compliance with the enhanced transparency framework of the Paris Agreement; (ii). Coherent policy frameworks for climate action in the agricultural sectors; (iii). Research, analysis and tools; (iv). Capacity development for implementation and action in the agricultural sectors, and (v). Investment for the development of the agricultural sectors (FAO, 2016b).

17. In line with these enhanced efforts on climate change and to meet the increasing needs of member states in the REU region, FAO has conceptualized a new regional initiative on "Sustainable Natural Resource Management under a changing climate". The main objective of the regional initiative will be to support member countries to strengthen and institutionalize climate change adaptation and mitigation as well as DRR and disaster risk management (DRM) responses into

agricultural and rural development responses. Main support areas will include: (i). Improved policy and policy dialogue for sustainable use of natural resources, climate change and DRR/DRM; (ii). Effective provision/collection of data, tools and services for effective decision making, and (iii) Capacity development for sustainable resource management and climate change adaption and mitigation and DRR. In addition the regional initiative will support the mainstreaming of climate change into FAO programmes and initiatives at both regional and country level.

18. As regards the GCF, FAO is considered a strong partner as it can offer extensive expertise which spans technical knowledge on agricultural best practices in different climate contexts; vulnerability, climate impact and risk assessments; providing practical guidelines for policy planning and investment mainstreaming for climate change and the agricultural sectors and coordinating multi-country climate change programmes, to name a few. FAO was accredited at the 14th meeting of the Board in October 2016 and countersigned the GCF Readiness and Preparatory Support Framework Agreement in November 2016⁹. It provides support to Member States to work in 4 main areas: (i). As an **Accredited entity** (FAO is a grant-implementing entity for a project size of up to USD 250M with a medium (or lower) level of environmental and social risk); (ii). As an **Executing Entity** (FAO is supporting the design and implementation of projects led by other accredited entities); (iii) As a **readiness delivery partner** in the GCF Readiness and Preparatory Support Programme (FAO is engaging through National Designated Authorities to strength countries' engagement with the GCF, comprising general readiness as well as adaptation¹⁰ planning funding lines), and (iv) As a **provider of technical assistance** (FAO is providing its technical expertise, especially in the agricultural sectors to member states and other accredited entities at scale). These FAO's supports are summarized in Table 5 below.

Table 5. Various roles of FAO for GCF project formulation and implementation

FAO as an Accredited Entity	FAO as a readiness delivery partner
<ul style="list-style-type: none"> • FAO is accredited to the GCF to manage: <ul style="list-style-type: none"> ○ projects up to USD250 million in total project size; ○ grant-based project management; and ○ projects with a medium level of environmental and social risk. • Formal limits on FAO's accreditation means that FAO cannot serve as an AE on projects: <ul style="list-style-type: none"> ○ with loan components; ○ where project execution arrangements are undefined at the time of Funding Proposal submission; ○ with a high level of E&S risk; or 	<ul style="list-style-type: none"> • The GCF Readiness and Preparatory Support Programme supports countries to develop the policies, plans and capacities needed to access and utilize large-scale climate finance from the GCF (and other sources). • The GCF provides support through two funding windows: <ul style="list-style-type: none"> ○ USD 1 million / year per country to: <ul style="list-style-type: none"> ▪ Establish and strengthen National Designated Authorities. ▪ Develop strategic frameworks and country programmes to guide a country's engagements with the GCF.

⁹ FAO is one of just five organizations that have signed a framework legal agreement with the GCF to cover all current and future readiness projects.

¹⁰ In December 2015, COP21 requested GCF "to expedite support for the least developed countries and other developing country Parties for the formulation of national adaptation plans, consistent with decisions 1/CP.16 and 5/CP.17, and for the subsequent implementation of policies, projects and programmes identified by them" (1/CP.21, para 46). In June 2016 at its 13th meeting, the GCF Board established the funding window for the "formulation of National Adaptation Plans (NAPs) and/or other adaptation planning processes" to support adaptation efforts in developing countries in the context of the UNFCCC Cancun Adaptation Framework and Article 7 of the Paris Agreement (Decision B.13/32). This funding is capped at USD 3 million per country. It may be used to fund any element of the national adaptation plans (NAPs) process.

<ul style="list-style-type: none"> ○ where the total project cost exceeds USD250 million. 	<ul style="list-style-type: none"> ▪ Strengthen Direct Access to GCF resources by regional, national and/or sub-national entities. ○ USD 3 million per country (non-renewable) to: <ul style="list-style-type: none"> ▪ Support National Adaptation Plans (NAPs) and other adaptation planning processes.
FAO as an Executing Entity	FAO as a provider of technical assistance
<ul style="list-style-type: none"> • FAO can support programmes and projects led by other AEs to deliver specific components on their behalf. • FAO can partner with: <ul style="list-style-type: none"> ○ other accredited UN entities (e.g. UNDP, UNEP) to deliver components suited to FAO's expertise/comparative advantage; ○ International Financial Institutions (e.g. World Bank) to execute grant-based components in the agricultural sectors; and ○ accredited regional and national entities ("Direct Access entities" in GCF terminology). • The GCF places a particular emphasis on building capacities for "Direct Access" over the long run. 	<ul style="list-style-type: none"> • FAO's technical expertise in the agricultural sectors is highly valued by other entities. • FAO can support other AEs to develop and deliver technically sound projects in the agricultural sectors at scale. <p>*When providing technical assistance to projects led by other AEs, FAO can also serve as an EE on specific project components during project delivery.</p>

Source: made by FAO

19. In the REU region, FAO has strongly advocated GCF capacity building in both ministerial institutions and FAO country offices to ensure national strategic decision making and prioritization of GCF interventions. It has also supported countries, such as Kyrgyzstan in accessing GCF readiness funds and developing GCF preparedness, FAO is ready to replicate and provide such support to other countries under this funding window. In regards to project formulation, FAO has prioritized a number of REU countries, based on the agreement of the National Designated Authority, the current national portfolio, FAO's current national capacity and the GCF investment criteria. The countries where project formulation has been initiated include: Armenia, Georgia, Kyrgyzstan and Uzbekistan. Additional countries where discussions are ongoing include: Azerbaijan, FYR Macedonia and Republic of Moldova. Should member states be interested in the FAO support mechanisms described in the paragraphs above they are kindly requested to contact the FAO Secretariat.

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