



ESTIMATED INVESTMENTS NEEDED FOR PRIORITY CLIMATE CHANGE MEASURES IN HONDURAS



Freshwater supply is critical for domestic, agricultural and economic activities. Climate change affects availability & quality of water resources. Photo: www.onedrop.org

→ Honduras is rich in biodiversity, but ecosystems are under pressure from competing demands for agricultural and forestry products. Meanwhile, land-use change and the transport sector account for a large share of the country's emissions. On the other hand, climate change affects important sectors of the country, including the water sector, as a result of increasingly irregular precipitation. Hence, the government assessed mitigation options to address land-use change and transport issues, as well ways to adapt to the impacts of climate change in the water sector.

According to the assessments of Investment and Financial Flows (I&FF), Honduras needs US\$6561.93 million up to 2030 to address climate change in these three sectors.

The I&FF assessment was undertaken as part of the global UNDP project, "*Capacity Development for Policy Makers to Address Climate Change*". Honduras is one of 19 countries participating in the project worldwide. The project is funded by the governments of Norway, Switzerland, Finland, UNDP, and the United Nations Foundation.

Selection of key sectors

Honduras has a forest cover of 46.9 per cent, which is decreasing (State Forestry Administration). The sector contributes only 2 per cent to GDP, but it is noteworthy that approximately 40 per cent of the rural population lives in forest lands. In 2000, the sector **land-use, land-use change and forestry** (LULUCF) contributed 25 per cent of national carbon dioxide (CO₂) emissions. Added to the trend of declining forests, forest sector issues are recognised

<http://www.undpcc.org/en/honduras>

as one of the biggest environmental problems in Honduras. Forests also provide important ecosystem services for sectors that are vulnerable to climate change, such as water, agriculture and others.

The **transport** sector is key for the stability and economic growth of the country, and therefore an important area when considering climate change mitigation. The land transport sector as a whole generates more than 90,000 jobs, including workers in passenger and freight transport, which is equivalent to more than 3 per cent of the economically active population.

Water is essential for sustainable development, but access to water has become critical due to the deterioration of watersheds, pollution of surface water and groundwater, and the demands of a growing population. For the water security of the Honduran population, the biggest problems are distribution and access to water, as well as the regulation of the sector.

Institutional arrangements

The national I&FF teams collaborated with the existing inter-agency Technical Committee on Climate Change (CTICC), which consists of various ministries and institutions engaged on climate change issues. The institutions participating in the CTICC platform contributed to the preparation of the I&FF assessments, and they also provided valuable support in ensuring access to the relevant information needed to realize the I&FF assessments. The CTICC platform also provided the opportunity to share and cross-check results.

The socio-economic and environmental assumptions used to define the different scenarios were agreed during national inter-ministerial dialogues.

UNDP and the Instituto Torcuato di Tella, a regional centre of excellence based in Argentina, provided technical assistance to the national I&FF teams.

In Ibero America, the global project outcomes have been reinforced through the UNDP regional initiative, *Climate*

Policy 2012, funded by the government of Spain and UNDP, which provided additional technical and financial support to amplify the impact of policy and investment discussions.

ASSESSMENT OF INVESTMENT AND FINANCIAL FLOWS

Objectives of the I&FF assessment

The overall objective of the I&FF assessment is to determine the extent and sources of funds needed to address climate change at the national level, and builds directly on national government strategies, plans and programmes. In essence, the assessment seeks to answer the question: *“From a development perspective, what can my country do to address climate change in selected key sectors, and what level of financial contributions will be needed to achieve these objectives?”*

In this context, the I&FF teams examined the questions:

- What are the main adaptation / mitigation measures for the selected sectors in the next 25 years?
- Who is investing in the sector / Who are the main stakeholders and sources?
- What changes / increase in I&FF will be needed in the sectors?
- What additional I&FF are needed to address climate change?

For each sector, a baseline and an adaptation or mitigation scenario were developed to determine the flows of investments and finance needed to undertake priority measures from 2011-2030. The values are given in constant 2005 US\$ (1US\$ = 19.06HNL). The assessment looks at the changes in investments needed for three different groups: households (families, individual farmers), corporations (private and NGOs), and the government.

For the sector land-use, land-use change and forestry (mitigation of GHG emissions)

During the period 2011-2030, the sector will need to invest an estimated US\$ 3,894.45 million for the following measures:

- **Reducing emissions from deforestation and forest degradation and enhancing forests as carbon reservoirs (REDD+):** Pilot a REDD+ project and institutional strengthening (US\$ 13.40 million);
- **Conservation:** Implement a strategy to resolve conflicts of land tenure and legalisation of land tenure in priority areas of the National System of Protected Areas of Honduras, as well as in indigenous territories (US\$ 969.93 million);
- **Afforestation and reforestation:** Promote agroforestry systems on agricultural land, encouraging reforestation using native species (US\$ 783.59 million).
- **Sustainable forest management:** Implement a forest protection strategy that includes fire and pest

management, control of logging and illegal transport of forest products, and promotion of certification for good forest management (US\$ 2127.53 million);

Ninety per cent of the incremental flows need to be invested by the government and 10 per cent by corporations. Sixty-six per cent of the total costs are from operation and maintenance, followed by 21 per cent from investment flows.

For the transport sector (mitigation of GHG emissions)

During the period 2011-2030, the sector will need to invest an estimated US\$ 1,554.80 million for the following measures:

- **Road network:** Construction of two routes for the cities of San Pedro Sula and Tegucigalpa of 4km each (US\$ 136.69 million);
- **Imported vehicles:** Incentives for the acquisition of imported vehicles improved to reduce fuel consumption and emissions so that the outdated vehicles are replaced in less time (US\$ 1412.25 million);
- **Pre-investment study for the Transportation Master Plan for Tegucigalpa, San Pedro Sula, La Ceiba and Choluteca:** Optimise the use of the road network, ensure proper maintenance and planning of the road network, control number and status of public transport units (US\$ 0.64 million);
- **Awareness campaigns and pre-investment studies:** Promote the benefits that will be gained from the application of the selected measures (US\$ 5.22 million).

Households would have to invest 91 per cent of the amount required in the sector, followed by the government with 8.5 per cent. Investment flows amount to 98 per cent of the total, while operating and maintenance costs account for 2 per cent.

For the water sector (adaptation to climate change impacts)

During the period 2011-2030, the sector will need to invest an estimated US\$ 1,112.68 million for the following measures:

- Build and maintain multipurpose **water reservoirs** (US\$ 971.48 million);
- Establish an **education program**, with modules on climate change, to initiate a process of education and training of agencies to ensure good governance in the use of water resources (US\$ 14.78 million);
- Assess **groundwater potential** for sustainable use (US\$ 2.41 million);
- Introduce mechanisms for **implementing the Water Act** to improve ecosystem services (US\$ 7.08 million);
- Build silos for domestic water consumption (US\$ 2.66 million); and
- **Implement integrated water management and water recharge areas:** Restore, reforest, manage and conserve water recharge areas (US\$ 114.27 million).

The greatest part of the additional finance must come from the government (88%), followed by companies with 12 percent. Out of these additional costs, investments are 84 per cent of the costs, followed by operation and maintenance costs (14%).

EVALUATION OF POLICY IMPLICATIONS

For the sector land-use, land-use change and forestry (mitigation of GHG emissions)

- The country needs to develop a national policy on climate change as identified in the 2010 National Climate Change Strategy, which should cover two major

national objectives for climate change: 1) reducing greenhouse gas emissions; and 2) strengthening synergies between mitigation and adaptation.

- Based on the measures proposed in the I&FF assessment and the main objectives of the National Climate Change Strategy, it is advisable to prioritise the measures of the Institutional Strategic Plan 2010-2015 accordingly.

For the transport sector (mitigation of GHG emissions)

- A strategy that could be used to cover the required incremental costs for the implementation of the measures is to establish partnerships between government and private enterprises, in which costs of

SUMMARY TABLES OF INCREMENTAL INVESTMENT COSTS

Table 1. Incremental investment and financial flows as well as operation and maintenance costs for all investments in each sector, by type of institution and source of investment. In millions of constant 2005 US\$, undiscounted. Period 2011-2030.

Category of investment entity/ Source of funds	Adaptation				Mitigation							
	Water				Forestry				Transport			
	ΔIF	ΔFF	ΔO&M	ΔTotal	ΔIF	ΔFF	ΔO&M	ΔTotal	ΔIF	ΔFF	ΔO&M	ΔTotal
Households												
Domestic funds												
Assets and debt	0.21	0.00	0.00	0.21					1,412.25	0.00	0.00	1,412.25
Total household funds	0.21	0.00	0.00	0.21					1,412.25	0.00	0.00	1,412.25
Corporations												
National assets	24.19	1.22	11.06	36.48					4.07	0.00	5.92	9.99
National loans	0.00	0.00	0.00	0.00					0.00	0.00	0.00	0.00
Total national funds	24.19	1.22	11.06	36.48					4.07	0.00	5.92	9.99
Foreign												
Foreign Direct Investment	0.00	0.00	0.00	0.00								
Foreign loans	89.45	0.00	4.12	93.57								
ODA												
Total foreign funds	89.45	0.00	4.12	93.57								
Total corporation funds	113.64	1.22	15.18	130.05	82.96	49.87	256.70	389.52	4.07	0.00	5.92	9.99
Government												
National funds	176.45	18.15	144.24	338.83	248.89	149.60	770.06	1,168.55	8.85	5.22	20.02	34.09
Foreign												
Foreign loans	643.21	0.38	0.00	643.59	165.85	99.56	513.11	778.54	97.83	0.64	0.00	98.47
Bilateral ODA					331.82	199.39	1,026.65	1,557.84				
Multilateral ODA												
Total foreign funds	643.21	0.38	0.00	643.59	497.67	298.95	1,539.76	2,336.38	97.83	0.64	0.00	98.47
Total government funds	819.66	18.53	144.24	982.42	746.57	448.56	2,310.36	3,504.93	106.68	5.86	20.02	132.56
Total	933.51	19.76	159.41	1,112.68	829.52	498.42	2,556.52	3,894.45	1,523.00	5.86	25.94	1,554.80

FI = investment flows, FF = financial flows, O&M = operation and maintenance costs
 ΔI&FF = change in investment and financial flows; ΔO&M = change in operation and maintenance costs
 Source: National I&FF assessments

equipment for detecting and measuring levels of greenhouse gases are initially funded by the government through external loans, which are later paid back by those companies that benefit from the gains received through using the equipment.

- Communication companies should be included in these efforts, which would include special rates for public campaigns in return for an annual grant.

For the water sector (adaptation to climate change impacts)

- The results of the I&FF assessment will help with strategic elements to be considered in the adoption of the National Congress of the country's water policy.

- The results also contribute to Goal 3 of the National Plan, *Country Vision 2010-2038*, which manifests the political will required to manage the necessary financial resources and to implement the adaptation measures identified in the assessment.
- The information of the I&FF assessment will be useful to define investment shares in public-private partnerships between government and private enterprises, which contributes to achieving Goal 3 of the National Plan.
- Another important mechanism that may contribute to implementation of these measures is the National Climate Change Strategy and Action Plan, for which national climate change adaptation and mitigation policies should be adopted.

Table 2. Annual incremental investment and financial flows as well as operation and maintenance cost for all investments in each sector. In millions of constant 2005 US\$, undiscounted. Period 2011-2030.

Year	Forestry				Mitigation				Transport				Adaptation Water			
	ΔIF	ΔFF	ΔO&M	ΔTotal	ΔIF	ΔFF	ΔO&M	ΔTotal	ΔIF	ΔFF	ΔO&M	ΔTotal	ΔIF	ΔFF	ΔO&M	ΔTotal
2011	8.51	6.29	110.69	125.49	108.21	0.88	-	109.08	0.74	0.65	3.24	4.64				
2012	13.70	11.15	118.23	143.08	21.72	0.80	-	22.51	40.25	1.77	5.68	47.70				
2013	16.87	11.70	116.99	145.56	20.30	0.32	0.33	20.95	112.00	1.10	6.38	119.48				
2014	20.27	13.73	118.62	152.62	27.03	0.32	0.33	27.68	106.99	1.02	6.94	114.94				
2015	23.68	15.42	120.21	159.30	33.75	0.32	0.33	34.40	145.02	1.52	7.54	154.07				
2016	26.63	17.21	121.71	165.55	40.48	0.32	0.33	41.13	114.25	0.92	7.21	122.38				
2017	30.00	19.16	123.21	172.37	47.20	0.32	0.33	47.85	108.63	0.91	7.95	117.49				
2018	32.66	20.48	124.46	177.60	53.93	0.32	0.33	54.58	103.27	0.90	7.97	112.14				
2019	36.00	22.30	125.95	184.25	60.65	0.32	0.33	61.31	69.42	0.89	7.90	78.21				
2020	39.53	24.24	127.42	191.18	67.38	0.32	0.33	68.03	38.43	1.33	12.81	52.57				
2021	42.75	25.83	128.86	197.43	73.97	0.16	2.33	76.47	15.84	0.87	8.70	25.40				
2022	46.18	27.58	130.28	204.04	80.70	0.16	2.33	83.19	10.43	0.74	8.71	19.87				
2023	49.47	29.47	131.71	210.65	87.43	0.16	2.33	89.92	9.96	0.73	8.68	19.37				
2024	52.91	31.04	133.14	217.09	94.15	0.16	2.33	96.64	9.51	0.73	8.66	18.90				
2025	56.60	32.78	134.54	223.92	100.88	0.16	2.33	103.37	8.98	2.17	8.62	19.76				
2026	59.85	34.66	135.95	230.46	107.60	0.16	2.33	110.09	8.69	0.72	8.58	17.99				
2027	63.38	36.26	138.04	237.68	114.33	0.16	2.33	116.82	8.31	0.71	8.54	17.56				
2028	66.84	37.97	140.11	244.92	121.05	0.16	2.33	123.54	7.94	0.70	8.49	17.13				
2029	70.15	39.84	142.19	252.17	127.78	0.16	2.33	130.27	7.59	0.69	8.44	16.73				
2030	73.55	41.30	144.24	259.08	134.50	0.16	2.33	136.99	7.26	0.69	8.39	16.33				
Total	829.52	498.40	2,566.53	3,894.45	1,523.00	5.86	25.94	1,554.80	933.51	19.76	159.41	1,112.68				

FI = investment flows, FF = financial flows, O&M = operation and maintenance costs
 ΔI&FF = change in investment and financial flows; ΔO&M = change in operation and maintenance costs
 Source: National I&FF assessments



Knowledge platform
 The project website www.undpcc.org contains information on the activities of Honduras, UNDP's I&FF methodology, and other resources.

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More information on activities in Honduras

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