



Sustainable Development - Case Studies in Ecuador

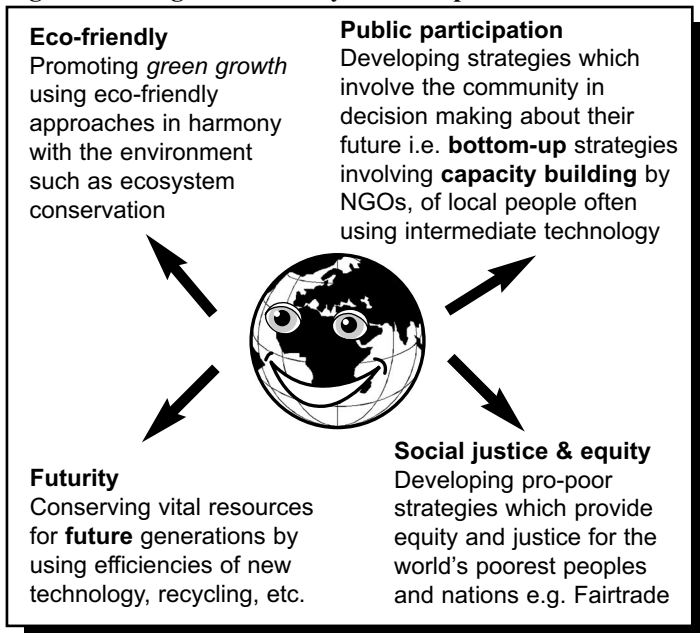
The Brundtland Commission (1987) defined sustainable development as “development that meets the needs of the present, without compromising the ability of future generations to meet their own needs”.

Needs of the present include:

- economic needs – in particular those of the world’s people living below the poverty line
- environmental needs
- socio-cultural and health needs
- political needs without compromising the ability of future generations to meet their own needs
- minimising the use or waste of non-renewable resources
- sustainable use of finite resources
- not overtaking ecosystems to perform vital services
- protecting natural systems and processes
- facilitating political and institutional structures within countries and internationally to support the above.

Johannesburg Summit 2002

Fig. 1 Assessing sustainability of development schemes.

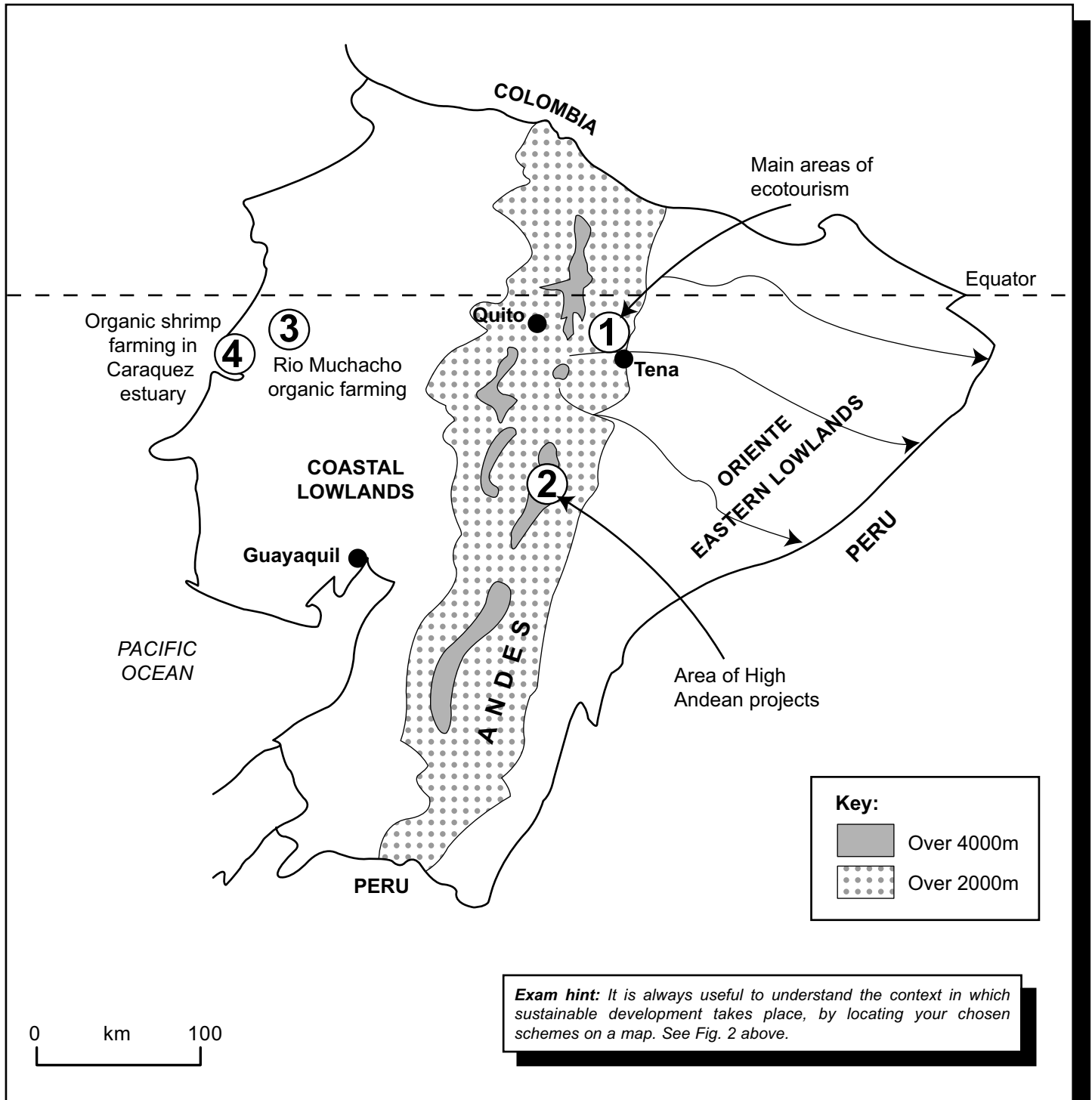


Exam hint: When assessing the sustainability of any scheme use the checklist of futurity, eco-friendliness, public participation and equity.

Any sustainable development schemes must be put into context. In this Factsheet the schemes are all found in Ecuador which is classified by the World Bank as a lower middle income country (see profile, right). In other words, an LEDC which is beginning to make some economic progress (fuelled by oil resources in the Eastern Lowlands and a thriving tourism industry).

<p>Profile of Ecuador</p> <ul style="list-style-type: none"> • Population 12.4 million • 60% mixed Indian-Spanish 25% pure Indian • 58% urban, 42% rural population
<ul style="list-style-type: none"> • GNP per capita \$1500 (2003). Nearly half of people living below poverty line largely in the Andean region or Oriente.
<ul style="list-style-type: none"> • HDI ranked 72 in world • Life expectancy 70 years • Literacy 91% • Infant mortality 100 per 1000 births
<p>Economic Strengths</p> <ul style="list-style-type: none"> • Net oil exporter • World’s biggest banana producer • Important fishing industry, but with over fishing problems • Diverse exports – coffee, cocoa, rice, sugar cane, fruit
<p>Economic Weaknesses</p> <ul style="list-style-type: none"> • Poor infrastructure • Poor productivity of Andean region
<ul style="list-style-type: none"> • The country is dissected by the 3 Andean ranges with adjacent high plateaux. • The Eastern Lowlands - Oriente are dominated by rainforest and Amazon head waters. • The Coastal Lowlands are the most densely settled, major agricultural area.
<p>The climate varies from hot equatorial in the Amazon rainforest to a modified high altitude climate in the Andes with constant temperatures (15-17°C) at 2500 metres.</p>
<p>Coastal area can be devastated by El Niño events (1998)</p>

Fig. 2 The location of the schemes.



What is Ecotourism?

A form of alternative tourism usually small in scale and claimed to be sustainable and 'environmentally friendly'.

Many people now demand a more environmentally friendly holiday and are prepared to pay for it. These cater for a niche market and are not part of modern day mass tourism. Many LEDC are now developing an ecotourism industry. Ecotourism is one of the most popular forms of alternative tourism. The tourist experience is more than just enjoyment. It also includes understanding and education. There is a close two way relationship between conservation and ecotourism. The crucial principle in ecotourism is the involvement of the local people as stewards of the resource. The idea is local control, responsible stewardship and economic benefit that work together to produce sustainable tourism.

Scheme 1 – Ecotourism in the Ecuadorean Rainforest

Ecuador has developed a number of areas of ecotourism. The main area is in the Amazon rainforest to the east of the country centred around Tena (as the main access point). It is usually developed by small groups of indigenous Quichua Indians - see Case Study below.

Case Study: El Pbutano Delos Buitres Nr Tena Ecuador

El Pbutano was until recently a family run rainforest farm managed in the traditional way. The farm is 300ha in size of which 80ha are cleared secondary forest, the rest is uncleared primary forest. Farming here has always followed traditional methods which protect the fragile forest ecosystem.

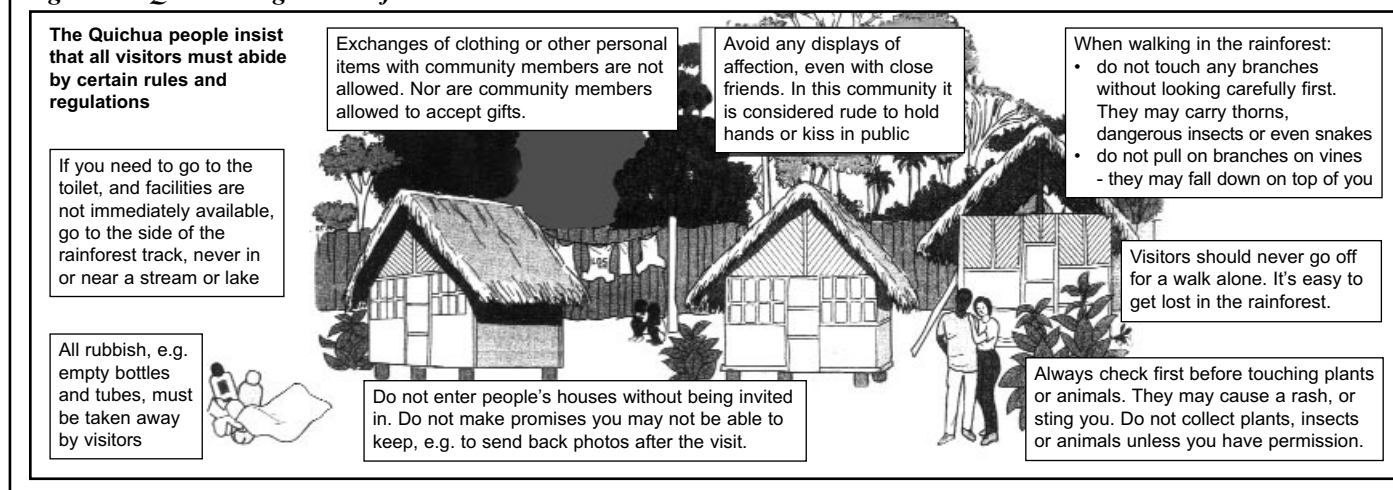
Over the last 8 years the farm has been developed into a sustainable ecotourism destination, run by the farmer in response to growing demand from explorer style tourists. The farm is located one and a half hours' drive from Tena and accessed by 4x4 transport along an unmade road followed by a 20 minute foot trek from the roadhead to a clearing in the forest.

The tourist capacity is small. A maximum of 16 guests can be accommodated at a time in the converted farmhouse on stilts which gives a maximum yearly capacity of 300 guests. The farm is still run as a working farm with 4 full time workers who live on site. The main outputs are bananas and fruit with small sugar and coffee plantations, along with grazing for cattle and horses.

All the farm buildings are built using local sustainable resources. The farmhouse is made of local wood, mainly bamboo, with a palm leaf roof which needs replacing every 15 years. The holidays include tours into the forest with a local guide and overnight camping to learn about local plants and to see community projects. The group size is kept small to ensure the forest is not damaged. All treks into the forest are on foot along existing paths and the routes are changed with each successive group to prevent erosion of the pathways. The cost is \$40 pppn, giving an annual income of \$48,000, half of which goes to the local community for improvements to local services and to pay the local guides.

Tourism is very low key and uninvasive; the local community largely ignore the tourists apart from the odd football match. The farm has been operating since 1996 as a tourist destination and its programme seems to be sustainable both in terms of the impact on the destination and the quality of experience for the tourist. The sketch shows how guests have to comply with strict regulations (Fig. 3).

Fig. 3 The Quichua regulations for ecotourism.



Scheme 2: Andean projects

Community Biodiversity Registers

If Andean communities are to be able to protect and benefit from their biodiversity, it is essential they can show in a modern court of law they have some ownership. CBRs are used to make an inventory of the bio knowledge and resources of the region. Video is used to record data about how particular plants are collected, prepared and used where they grow. The recording process uses a simple matrix to help the local people register - the uses of plants for food, medicine and ecosystem renewal, but also their associated spiritual and cultural values. The information will be stored in a multi-media interactive database with a terminal in each community.

Barter Markets

As a result of the altitudinal variations which lead to varied agro-ecological zones, there is enormous potential for local Indians to barter crops at specially set up markets - anyone can participate and can trade any amount of their surplus from subsistence. The markets are usually held in the middle area of the valley, with women the key players. They have numerous benefits such as improved income, balanced and more varied diets and also help to conserve agro diversity. The markets are a major social event in binding the communities together.

Scheme 3: Sustainable organic farming - Rio Muchacho Bahia de Caraquez

Farming practices in the Rio Muchacho area are conventional and mainly destructive. The main practices are slash and burn mono-cropping and the wide use of chemical fertilisers which have led to an impoverished soil. The area of Rio Muchacho was once dense rainforest, which has been cleared for cattle farming and cropping. The local people are mainly subsistence farmers who also produce small amounts of peanuts, coffee, cocoa and passion fruit as cash crops. The families traditionally live in bamboo huts along the main rivers.

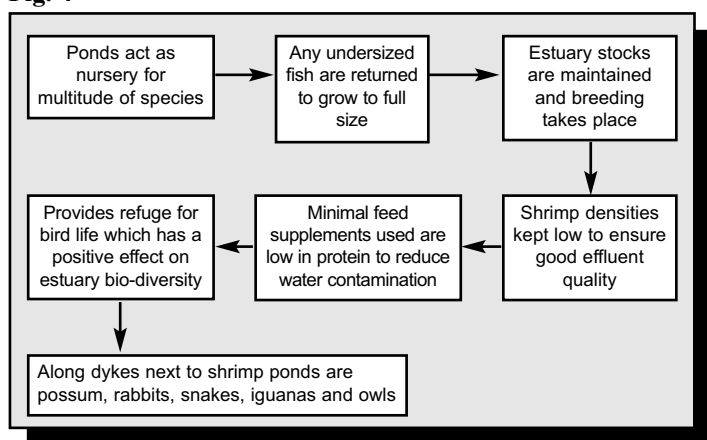
Rio Muchacho was converted to an organic farm 15 years ago and is now also used as a model for the local community to encourage re-forestation, permaculture and organic farming techniques throughout the area. The farm has set up a local Primary school which not only teaches the traditional subjects but also new sustainable farming techniques such as recycling and waste management to the local children. The school was a joint effort between the owners of the farm and the local people with each family donating local building material. To fund the school the Rio Muchacho farm also runs 3 day ecotourism trips where visitors stay on the farm, as well as a volunteer programme to help the day to day running of the farm. The volunteers pay for their board and lodging.

Scheme 4: Organic shrimp farming in the Caraquez estuary

A satellite photo of 30 years ago shows 4,000 ha of primary mangrove forest in the coastal areas around Bahia. The mangrove ecosystem is one of the richest and most productive on the planet and is an important nursery for many marine species.

The first shrimp farms in Ecuador were built 30 years ago. Initial development was on the salt marshes around the estuary; as demand increased the mangrove forest was cleared. Deforestation continued until only 5% of the mangroves were left. In 30 years the mangrove forests had been destroyed. Ecuador was once famous for being the largest producer of shrimp in the world, today it's fame is tarred by the environmental impact of the industry.

In 1997-98 work began to convert an established shrimp farm in the Caraquez estuary to a sustainable organic one. It was the first initiative to create a more sustainable shrimp industry. The principles used here are relevant to any kind of farming/land use.

Fig. 4

The farm provides a source of employment for the local community as they harvest the grain off the leguminous trees preserved in the estuary. Flower gardens have been created for the local community and a heritage area is being re-established giving the local community access to traditional fishing sites to collect shellfish and crabs.

In 2003-2004 the Ecuadorian shrimp industry declined further with very low world prices. While the organic farm at Eco Camaronera is not exempt from these influences, at present it continues to produce well and is currently sustainable.

Further research

Useful articles in *Developments, Issue 18, Second Quarter 2002, DFD*

Useful websites include:

- www.itdg.org.uk
- www.riomuchaco.com
- www.riosecuador.com
- www.qni.com/-mj/riomuchacho
- www.actionaid.org.uk

Questions**Exercise 1**

Using the following matrix, assess the sustainability of the farm projects quoting supporting evidence for your assessment.

Project 1	Purpose of project	Futurity	Environment	Public participation	Equality & social justice

Possible essay title: With reference to a named rural area, explain how sustainable projects are improving the lives of the rural communities. [10]

Exercise 2

Study the table below and answer the following questions.

Initiative	Before the scheme started (1993)	After the scheme began (1996)
% of households leaving land fallow for 1-3 months	75.8	45.5
% of households growing crops for subsistence only	16.7	3.8
% of households producing goods for sale to market	4.2	26.7
% of households using soil conservation techniques	2.9	50
% of households that have received formal training	6.3	42.5
% of households using experimental crop varieties	0	49.2
% of households using chemical fertiliser	0	21.6
% of households composting and manuring	42	88
% of village land area used for crops	46	65

- (a) (i) Identify three features which suggest the scheme has achieved increased sustainability. [3]
(ii) Suggest two potential problems which the scheme may cause. [2]
- (b) Assess the likely impacts of this development scheme:
(i) on the local community [5]
(ii) on the environment. [5]

Answer Guidelines

- Note for essay title restrict the area to either coastal lowlands (Schemes 3 and 4) or Andean slopes and rainforest schemes (1 and 2).
- Short answer question.

- (a) (i) Look for environmentally friendly practices and also community involvement.
(ii) Look for impacts of intensification x 2.
- (b) (i) & (ii) always look for +/- for instance the community will be richer and may have a more varied diet and maybe working much harder. For environment again look for +/-.

Acknowledgements

The research for this Factsheet was done by Helen Gadsby from field trips to Ecuador when she was a teacher at Queen Elizabeth's School, Barnet. It was put together by Sue Warn. Helen Gadsby now works as a senior lecturer at Hope University in Liverpool.

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