



“Sustainability Practices and Food Security in Rural Costa Rica”

A Service-learning Course with an Environmental/Ecological and Sustainable Development Focus at Finca La Flor

With the objective of providing students in the areas of Environmental and Sustainability Studies with an opportunity for a first-hand practical experience in the field of environment and ecology in Costa Rica, the International Center for Development Studies (ICDS), in conjunction with Finca La Flor, proposes a course focusing on water management and organic agriculture policies and practices at Finca La Flor, an agro-ecological farm.

Academic Content

The three week course will consist of a total of ninety contact hours to be dedicated to both the study of relevant concepts to better understand Finca La Flor’s water management and organic agriculture practices, and actual work at the farm in accordance with the farm’s needs. The recommended number of credits for this course is four (4).

Participating students in this proposed three-week course will be exposed to and have a chance to work in the following main areas at Finca La Flor:

1. **Water management:** As in any farm involving agriculture and animal husbandry, the demand for water is high. Although the farm has policies and has implemented techniques to regulate and reduce the consumption of potable water, water management in the farm has room for improvement.
2. **Organic agriculture:** Excessive use of agrochemicals in conventional agriculture in the area has caused serious damage and degradation of the land. Thus, the farm has said No to using chemicals and uses organic agriculture instead to avoid air pollution and food contamination.

The results of the students’ work will help the farm authorities evaluate how efficient Finca La Flor’s current efforts in both areas are and what new and more effective/efficient techniques could be adopted.

Students will in this way contribute to the farm’s goals regarding improvement of their policies, practices, and techniques in their water management and organic agriculture endeavors by looking into what is being done, conducting a situation and ecological footprint analysis, and registering the changes and the externalities attached to those changes. The ultimate result of the work of the students will be their contribution to the final objective of finding practical solutions for the environmental problems of the community where Finca La Flor is located and assuring the sustainability of its development.



Faculty

The course “Sustainability Practices in Rural Costa Rica” will be taught by ICDS faculty, who are academics and leading practitioners in their fields. ICDS’ professors participate in research and education simultaneously and their first-hand experiences represent tremendous resources in the human rights and sustainable development fields.

Host Institution(s)

The main host institution for this course is the International Center for Development Studies (ICDS), working jointly with its institutional partner, Universidad Latina de Costa Rica. An additional host institution for this course in particular is the Association for the Development of Environmental and Human Awareness (ASODECAH), a non-profit association whose objective is to complement the country’s environmental education and to strengthen the relationship between society and the environment. The association is integrated by neighbors of the community as well as professionals working together on an integrated farm (Finca La Flor) seeking the sustainability of its social and environmental projects.

Course Site

Finca La Flor is an agroecological farm located in the highlands of Costa Rica’s Central Valley in the town of La Flor, approximately 1 1/2 hours to the East of San Jose, above the Orosi Valley near Paraíso in Cartago, Costa Rica. Its grounds include ten hectares of regenerated forest, botanical and medicinal gardens, domestic animals (goats, chickens, horses) and organic agriculture. The farm is part of a larger effort involving neighbors of the local community and professionals working together to secure the sustainability of social and environmental projects in the area. Their efforts seek to fill the protection gap that exists between Costa Rica’s extensive protected areas and communities experiencing “harsh environmental impacts from the contamination of rivers and ravines, gas emissions, inadequate management of solid and liquid wastes, deforestation, monoculture, extensive cattle ranching and an excessive use of agrochemicals in the fields of agriculture and cattle farming,”¹ including the community where the farm is located.

Course Objectives

- The issues of sustainability in the context of the specific field research location will be explored and
- Students will gain an understanding of sustainable principles and their application in a tropical rural setting.
- Students will gain hands-on experience of tropical agricultural landscapes and dynamics.
- Students will explore forest ecosystems and participate in forest management and species data collection.
- Students will design, develop and implement improvements in sustainable systems.
- Students will gain first hand research experience.



- Students will gain deep insight into the possible implementation of related environmental and sustainable development policy.
- Students will address the advances and limitations in the application of organic farming, alternative agricultural and animal husbandry methods.
- Students will appreciate the complexities and challenges in working with participatory processes and help develop relations, projects and mutual support between the local community and the farm.

Students will be guided through the principles of the systems of permaculture, low impact goat keeping (La Flor provides one of the best examples in the region of low impact goat management systems), sustainable, organic and integrated farming systems, and environmental education. Students will participate in a dynamic rural setting and thoroughly appreciate the application of sustainable development principles and concepts through a diverse set of agricultural activities. Possible on-site projects include:

- Forest maintenance (including trail blazing and humid tropical forest pruning and tree care).
- Forest Flora and Fauna Inventory Development
- Implementation and maintenance of biodigestor systems.
- Implementation and maintenance of water management systems.
- Implementation and maintenance of waste and recycling systems.
- Implementation and maintenance of permaculture systems.
- Upkeep and development of the children's garden.
- Community outreach programmes and environmental education.
- Development of the library and teaching resources project.
- The production of composts.
- Milk and cheese production.
- Goat keeping, animal husbandry and farm animal care.
- Improving "access for all"
- Innovations and improvements with low impact technologies.

Participatory and bottom-up approaches

The design, development and implementation of the possible projects will depend on the current priorities and needs of La Flor, their staff, community and systems. They will vary according to season and will be established through inter-institutional pre-visit planning (between La Flor and ICDS) and the



initial stages of the course (between the students and La Flor and ICDS academic staff). Student's innovations are welcome at the design level and these will be thoroughly discussed with La Flor and ICDS for possible implementation. Finca La Flor has already expressed interest in improving water management systems, community outreach programmes, forest maintenance, and the re-installation of a bio-digester plant and would welcome project designs and support in these areas among others. Each student will get a chance to participate in many of the farming methods and experience many features of the integrated sustainable systems. Students will be actively guided through the sustainable development theory, systems and practice. Long term vision:

We will be supporting La Flor in the profiling, data collection and analysis of their sustainable systems, developing system definitions, variables and producing a data base of information. ICDS students will hopefully become part of a long term desire of the farm to be improving its search and implementation of sustainability, along with fulfilling the desire of ICDS to support its students through the possibility of doing meaningful work in the field and contributing to Costa Rica's unfolding sustainable development practices.

Program & Course Content:

First week

Academic content

- Introduction, course description and project assignments
- Definitions (sustainability, agroecology, agroforestry)
- Costa Rica in its development context
- Environmental and Sustainable Development Policy and community farming issues
- Sustainable food production

Field work

- Introduction to Finca La Flor: staff will guide students, present La Flor's goals and objectives, describe and show sustainable techniques employed, and point out possible areas for individual research and analysis.
- Work will be assigned to individual students in line with the projects/methods selected for evaluation. Every day, students will dedicate time to this project in addition to the work assigned by farm supervisor.
- Focus on water management at La Flor: learn and analyze techniques employed at the farm to decrease water waste and make efficient use of this resource.



Second week

Academic content

- Agriculture and the environment
- Soil conservation
- Forest management
- Energy management
- Sustainable animal husbandry

Field work

- Pest management techniques
- Soil conservation
- Waste management
- Biodigestor
- Work on Individual projects

Third week

Academic content

- Biodiversity and agriculture,
- Permaculture
- Organic agriculture
- Extension and environmental education
- Food production and human health

Field work

- Organic agriculture
- Organic fertilizers
- Community engagement:
- Present to farm, community, and ICDS staff the results of individual projects