



International Institute
for Sustainable Finance

IISF

EXECUTIVE EDUCATION • COURSE 04 OF 06

Sustainable Agriculture and Food Systems

Course Syllabus

Self-paced online course

About 20 hours • 8 modules • 40 lessons

2026 Edition

Version 1.0 • October 2026

sustainablefinance.in

COURSE 04

Course Overview

The science, practice, markets, and finance of producing food within environmental limits.

Food systems feed the world, employ a large share of its workforce, and account for about a third of greenhouse gas emissions. This course explains how they work, where their environmental and social pressures arise, and which practices, market mechanisms, and financial instruments change them.

Participants work with the GHG Protocol Land Sector and Removals Standard, the SBTi Forest, Land and Agriculture Guidance, the FAO's frameworks for climate-smart agriculture and agroecology, the TNFD, and the instruments used to finance smallholders.

At a glance

Level	Introductory to intermediate
Format	Self-paced and online. Recorded lessons on the IISF learning platform.
Study time	About 20 hours
Structure	8 modules and 40 lessons
Enrolment	Open throughout the year, with no fixed start date
Access	12 months from enrolment
Assessment	A quiz in every module, then a final quiz
Award	IISF Certificate of Completion for the course
Fee	USD 200. All six courses taken together: USD 1,000.
Prerequisites	None. Course 1, Foundations of Sustainability, is recommended first.

Who the course is for

- 1 Professionals in agribusiness, food companies, and commodity trading.
- 2 Bankers, investors, and development practitioners financing agriculture.
- 3 Policy and sustainability specialists working on land, food, and rural livelihoods.

COURSE 04

Outcomes and Structure

What you will be able to do

On completing the course, a participant should be able to:

CO1	Describe the structure of food systems and the four pillars of food security.
CO2	Estimate farm-level greenhouse gas emissions and identify mitigation options.
CO3	Compare regenerative, agroecological, and conventional practices on the evidence.
CO4	Apply the TNFD LEAP approach to a sourcing region.
CO5	Evaluate financing instruments for smallholders and agricultural value chains.
CO6	Assess an agricultural carbon project against the Core Carbon Principles.

Course structure

Module	Title	Lessons	Study time
Module 1	Food Systems and Their Footprint	5	2 h 15 min
Module 2	Agricultural Emissions and Climate Risk	5	2 h 15 min
Module 3	Regenerative and Agroecological Practice	5	2 h 15 min
Module 4	Land, Water, and Biodiversity	5	2 h 15 min
Module 5	Sustainable Value Chains and Markets	5	2 h 15 min
Module 6	Financing Agriculture and Smallholders	5	2 h 15 min
Module 7	Carbon, Nature Markets, and Incentives	5	2 h 15 min
Module 8	Strategy for Sustainable Agri-Food	5	2 h 15 min
Assessment	Revision and final quiz		2 h
Total		40	20 h

MODULE 1 OF 8 • 2 HOURS 15 MINUTES • 5 LESSONS

Food Systems and Their Footprint

How food systems are organised, what they deliver, and what they cost the environment.

No.	Lesson	What it covers
1.1	The food system	From inputs to consumption: actors, power, and outcomes for nutrition, livelihoods, and the environment.
1.2	Food security	The four pillars defined by the FAO: availability, access, utilisation, and stability.
1.3	The footprint	Greenhouse gases, land, fresh water, and biodiversity; the planetary health diet of the EAT-Lancet Commission.
1.4	Smallholders	Farm size, productivity gaps, rural poverty, and the position of women farmers.
1.5	Global commitments	Sustainable Development Goal 2, the COP28 declaration on agriculture, and the biodiversity framework.

Ref.	On completing this module, you should be able to:
LO 1.1	Describe the components of a food system and the four pillars of food security.
LO 1.2	Explain the principal environmental pressures of food production.
LO 1.3	Analyse the constraints that smallholder farmers face.

Standards and frameworks	FAO State of Food Security and Nutrition in the World; HLPE food systems framework; EAT-Lancet Commission (2019, 2025); COP28 UAE Declaration on Sustainable Agriculture (2023); Kunming-Montreal Global Biodiversity Framework, Targets 7, 10 and 18.
Core reading	Marked extract from FAO and partners, The State of Food Security and Nutrition in the World (latest edition).
Key terms	food system; food security; availability; access; utilisation; stability; smallholder; planetary health diet; yield gap.
Case study	India's Green Revolution. Higher yields and food security, and the later costs in groundwater and soil.
Practice exercise	Map a food value chain from input to plate and mark its environmental hotspots.

MODULE 2 OF 8 • 2 HOURS 15 MINUTES • 5 LESSONS

Agricultural Emissions and Climate Risk

Where agricultural emissions come from, how they are counted, and how farming adapts to a changing climate.

No.	Lesson	What it covers
2.1	Sources	Enteric fermentation, manure, rice methane, nitrous oxide from fertiliser, land-use change, and energy.
2.2	Accounting	The IPCC Guidelines, the GHG Protocol Land Sector and Removals Standard, and SBTi land-sector targets.
2.3	Mitigation practices	Alternate wetting and drying, feed additives, nutrient management, agroforestry, and biochar.
2.4	Climate impacts	Heat, drought, flood, and pests, and projected yield losses in South Asia and Sub-Saharan Africa.
2.5	Adaptation	The three pillars of climate-smart agriculture, resilient varieties, water harvesting, and climate services.

Ref.	On completing this module, you should be able to:
LO 2.1	Identify the main sources of agricultural greenhouse gas emissions.
LO 2.2	Estimate the emissions of a farm using the Cool Farm Tool.
LO 2.3	Explain the three pillars of climate-smart agriculture.

Standards and frameworks	IPCC 2006 Guidelines and 2019 Refinement; GHG Protocol Land Sector and Removals Standard (2026); SBTi Forest, Land and Agriculture Guidance; Cool Farm Tool; FAO EX-ACT; Global Methane Pledge; FAO Climate-Smart Agriculture Sourcebook.
Core reading	Marked extract from GHG Protocol, Land Sector and Removals Standard (2026).
Key terms	enteric fermentation; nitrous oxide; land-use change; emission factor; tiers 1, 2 and 3; alternate wetting and drying; climate-smart agriculture; adaptive capacity.
Case study	Rice in Vietnam and the Philippines. Alternate wetting and drying: lower methane, less water, and the obstacles to adoption.
Practice exercise	Estimate emissions for a rice farm and test the effect of two mitigation practices.

MODULE 3 OF 8 • 2 HOURS 15 MINUTES • 5 LESSONS

Regenerative and Agroecological Practice

Soil health and the farming systems built around it, with the evidence for and against.

No.	Lesson	What it covers
3.1	Soil health	Organic matter, soil biology, erosion, and the dynamics of soil carbon.
3.2	Regenerative agriculture	Its principles, and outcome-based definitions such as the SAI Platform framework.
3.3	Agroecology	The FAO's ten elements, the HLPE's thirteen principles, and natural farming in India.
3.4	Integrated systems	Agroforestry, crop and livestock integration, conservation agriculture, and organic standards.
3.5	Evidence and trade-offs	Yields, labour, transition costs, and the difficulty of measuring outcomes.

Ref.	On completing this module, you should be able to:
LO 3.1	Explain the principles of regenerative agriculture and of agroecology.
LO 3.2	Compare regenerative, organic, and conventional systems on yield, cost, and environmental outcome.
LO 3.3	Design a transition plan for a farm, with costs and expected benefits.

Standards and frameworks	FAO Ten Elements of Agroecology (2018); HLPE report on agroecological approaches (2019); SAI Platform Regenerating Together framework; IFOAM organic standards; India's National Mission on Natural Farming.
Core reading	Marked extract from FAO, The Ten Elements of Agroecology (2018).
Key terms	soil organic carbon; cover crop; minimum tillage; agroforestry; agroecology; natural farming; conservation agriculture; transition cost.
Case study	Andhra Pradesh. Community Managed Natural Farming: a state programme to move farmers off synthetic inputs.
Practice exercise	Draw up a three-year transition plan for a ten-hectare farm.

MODULE 4 OF 8 • 2 HOURS 15 MINUTES • 5 LESSONS

Land, Water, and Biodiversity

The natural systems that agriculture depends on, and the tools to assess and account for them.

No.	Lesson	What it covers
4.1	Land-use change	Drivers of deforestation and conversion, the EU Deforestation Regulation, and conversion-free supply.
4.2	Water	Scarcity, irrigation efficiency, groundwater, the water footprint, and the AWS Standard.
4.3	Farm biodiversity	Pollinators, pesticide risk, and nature targets under the Science Based Targets Network.
4.4	Natural capital accounting	The UN SEEA Ecosystem Accounting framework, TEEBAgriFood, and the Philippine PENCAS Act.
4.5	Land rights	The Voluntary Guidelines on tenure, free, prior and informed consent, and women's rights to land.

Ref.	On completing this module, you should be able to:
LO 4.1	Apply the TNFD LEAP approach to an agricultural sourcing region.
LO 4.2	Calculate the water footprint of a crop under ISO 14046.
LO 4.3	Explain the structure of ecosystem accounts under the UN SEEA framework.

Standards and frameworks	EU Deforestation Regulation; AWS Standard; ISO 14046:2014; TNFD LEAP approach and food and agriculture guidance; Science Based Targets Network; UN SEEA Ecosystem Accounting (2021); TEEBAgriFood; Philippine PENCAS Act (2024); Voluntary Guidelines on Tenure (2012).
Core reading	Marked extract from TNFD, Guidance on the identification and assessment of nature-related issues: the LEAP approach.
Key terms	conversion; water stress; water footprint; pollinator; dependency; ecosystem extent; ecosystem condition; tenure; free, prior and informed consent.
Case study	Soy in the Cerrado. Conversion of Brazil's savannah, and the effort to build a conversion-free supply.
Practice exercise	Carry out the Locate and Evaluate phases of LEAP for one crop in one region.

MODULE 5 OF 8 • 2 HOURS 15 MINUTES • 5 LESSONS

Sustainable Value Chains and Markets

How value chains reward or penalise sustainable production, from certification to diets.

No.	Lesson	What it covers
5.1	Value chain structure	Inputs, production, aggregation, processing, and retail; where margin and power sit.
5.2	Certification	Rainforest Alliance, Fairtrade, organic, GLOBALG.A.P., Bonsucro, and Better Cotton, and the evidence on impact.
5.3	Food loss and waste	Target 12.3, the Food Loss and Waste Accounting and Reporting Standard, and cold chains.
5.4	Corporate sourcing	Land-sector targets, regenerative sourcing commitments, and living income for farmers.
5.5	Protein and diets	Alternative proteins, dietary change, and public procurement.

Ref.	On completing this module, you should be able to:
LO 5.1	Analyse how value and risk are distributed along an agricultural value chain.
LO 5.2	Evaluate the evidence on the impact of certification schemes.
LO 5.3	Calculate food loss and waste using the Food Loss and Waste Standard.

Standards and frameworks	Rainforest Alliance Sustainable Agriculture Standard; Fairtrade Standards; GLOBALG.A.P.; Food Loss and Waste Accounting and Reporting Standard (2016); SBTi Forest, Land and Agriculture Guidance; Living Income Community of Practice.
Core reading	Marked extract from Food Loss and Waste Protocol, Food Loss and Waste Accounting and Reporting Standard (2016).
Key terms	aggregation; farm-gate price; certification premium; chain of custody; food loss; food waste; living income; regenerative sourcing; alternative protein.
Case study	ITC e-Choupal. Village internet kiosks that changed how Indian farmers sell grain and buy inputs.
Practice exercise	Identify the three largest points of loss in a perishable value chain and cost a remedy for one.

MODULE 6 OF 8 • 2 HOURS 15 MINUTES • 5 LESSONS

Financing Agriculture and Smallholders

Why agriculture is under-financed, and which instruments reach farmers.

No.	Lesson	What it covers
6.1	The finance gap	Seasonality, weather and price risk, weak collateral, and high cost to serve.
6.2	Credit instruments	Value chain finance, warehouse receipts, input credit, leasing, and India's Kisan Credit Card.
6.3	Managing risk	Index insurance, India's crop insurance scheme, credit guarantees, and price risk tools.
6.4	Blended finance	IFAD, the Global Agriculture and Food Security Program, the Green Climate Fund, and specialised funds.
6.5	Labelled agri-finance	Green and sustainability-linked loans for agribusiness, and the Climate Bonds agriculture criteria.

Ref.	On completing this module, you should be able to:
LO 6.1	Explain why smallholder agriculture is under-served by commercial lenders.
LO 6.2	Compare warehouse receipt finance, value chain finance, and index insurance.
LO 6.3	Structure a blended finance facility for a smallholder value chain.

Standards and frameworks	IFC Performance Standard 6; ICMA Green Bond Principles; LMA Sustainability-Linked Loan Principles; Climate Bonds Agriculture Criteria; Pradhan Mantri Fasal Bima Yojana; Green Climate Fund; GAFSP; IFAD.
Core reading	Marked extract from Climate Bonds Initiative, Agriculture Criteria.
Key terms	value chain finance; warehouse receipt; input credit; index insurance; basis risk; credit guarantee; first-loss capital; technical assistance facility.
Case study	Index insurance in Kenya and India. From Kilimo Salama to ACRE Africa, and the experience of India's national crop insurance scheme.
Practice exercise	Outline the capital structure of a blended facility that lends to farmer cooperatives.

MODULE 7 OF 8 • 2 HOURS 15 MINUTES • 5 LESSONS

Carbon, Nature Markets, and Incentives

Paying farmers for carbon and nature, and reforming the subsidies that work against both.

No.	Lesson	What it covers
7.1	Agricultural carbon projects	Soil carbon, agroforestry, rice methane, and livestock; Verra VM0042 and Gold Standard methods.
7.2	Integrity	Additionality, permanence, leakage, and measurement; the Core Carbon Principles; sharing benefits with farmers.
7.3	Public schemes	Article 6, the EU Carbon Removals and Carbon Farming Regulation, and India's carbon and green credit schemes.
7.4	Paying for nature	Payments for ecosystem services and the emerging frameworks for biodiversity credits.
7.5	Subsidy reform	Repurposing agricultural support, Target 18 of the biodiversity framework, and fertiliser and price policy.

Ref.	On completing this module, you should be able to:
LO 7.1	Describe the methodologies used to credit agricultural carbon projects.
LO 7.2	Assess an agricultural carbon project against the ICVCM Core Carbon Principles.
LO 7.3	Explain the case for repurposing agricultural subsidies.

Standards and frameworks	Verra VM0042; Gold Standard; ICVCM Core Carbon Principles; Paris Agreement Article 6; EU Carbon Removals and Carbon Farming Regulation (2024); India's Carbon Credit Trading Scheme and Green Credit Programme; IAPB Framework for biodiversity credits (2024).
Core reading	Marked extract from ICVCM, Core Carbon Principles and Assessment Framework.
Key terms	additionality; baseline; permanence; leakage; buffer pool; measurement, reporting and verification; benefit sharing; biodiversity credit; payment for ecosystem services.
Case study	Rabobank Acorn. Agroforestry carbon removal units sold on behalf of smallholders, with most revenue returned to farmers.
Practice exercise	Review a soil carbon project document and score it against the ten Core Carbon Principles.

MODULE 8 OF 8 • 2 HOURS 15 MINUTES • 5 LESSONS

Strategy for Sustainable Agri-Food

Bringing science, practice, markets, and finance together in a strategy for a company or a portfolio.

No.	Lesson	What it covers
8.1	Strategy	Materiality, land-sector targets, and a roadmap for an agribusiness.
8.2	Sourcing programmes	Farmer engagement, premiums, extension, and digital advisory services.
8.3	Technology	Precision agriculture, remote sensing, and digital public infrastructure such as India's AgriStack.
8.4	Reporting	GRI 13, TNFD sector guidance, IFRS S2, and ESRS E4 on biodiversity.
8.5	The strategy paper	Framing the problem, choosing levers, costing them, and setting measures.

Ref.	On completing this module, you should be able to:
LO 8.1	Describe the disclosures required of agricultural companies under GRI 13.
LO 8.2	Evaluate a regenerative sourcing commitment for credibility.
LO 8.3	Formulate a sustainability strategy for an agribusiness or an agricultural loan portfolio.

Standards and frameworks	GRI 13 Agriculture, Aquaculture and Fishing Sectors (2022); TNFD sector guidance for food and agriculture; SBTi Forest, Land and Agriculture Guidance; IFRS S2; ESRS E4.
Core reading	Marked extract from GRI 13: Agriculture, Aquaculture and Fishing Sectors (2022).
Key terms	land-sector target; no-deforestation commitment; extension service; digital advisory; precision agriculture; remote sensing; sector standard; strategy paper.
Case study	Nestlé. A commitment to source half of key ingredients through regenerative agriculture by 2030, and how it is measured.
Practice exercise	Outline a strategy paper for a rice miller seeking a low-methane supply.

COURSE 04

Learning and Assessment

How you will learn

Recorded lessons	Five lessons in each module, available at any time on the IISF learning platform.
Core reading	One marked extract in each module, of about ten pages, taken from the standards and reports named in this syllabus.
Practice exercise	One exercise in each module, with a worksheet and a worked solution. It is not assessed.
Case study	One case in each module, drawn from practice in advanced and emerging markets.

How you will be assessed

Module quizzes	A short quiz at the end of each of the eight modules.
Final quiz	A quiz covering all eight modules, taken once the module quizzes are complete.
Pass requirement	Completion of the eight module quizzes and a pass in the final quiz. The pass mark is stated on the learning platform.

Certificate

Course certificate	The IISF Certificate of Completion for this course is awarded to participants who meet the pass requirement.
Executive Certificate	Participants who earn the certificate in all six courses receive the IISF Executive Certificate in Sustainability and Sustainable Finance.
Verification	Every certificate carries a reference that can be checked online.

COURSE 04

Core References

The course draws on the sources below. Each module names the standards and frameworks it teaches, and the learning platform links to the current edition of each.

Publisher or author	Document
FAO	The State of Food Security and Nutrition in the World (annual)
FAO	Climate-Smart Agriculture Sourcebook
FAO	The Ten Elements of Agroecology (2018)
HLPE	Agroecological and other innovative approaches for sustainable agriculture and food systems (2019)
EAT-Lancet Commission	Food in the Anthropocene (2019) and the 2025 Commission report
IPCC	2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4
GHG Protocol	Land Sector and Removals Standard (2026)
Science Based Targets initiative	Forest, Land and Agriculture Guidance
TNFD	Additional sector guidance: Food and agriculture (2024)
United Nations	System of Environmental-Economic Accounting: Ecosystem Accounting (2021)
ICVCM	Core Carbon Principles and Assessment Framework
FAO, UNDP and UNEP	A Multi-Billion-Dollar Opportunity: Repurposing agricultural support to transform food systems (2021)

Currency of the syllabus

Standards and regulations are cited as in force in October 2026. Lessons are revised when a named standard changes, and the revision is recorded on the learning platform.

EXECUTIVE EDUCATION

The Learning Pathway

This course is one of six. Each stands alone and may be taken in any order, although Course 1 is recommended first.

Course	Title	Study time
Course 1	Foundations of Sustainability	20 h
Course 2	Sustainable Business Models	20 h
Course 3	Sustainable Supply Chains	20 h
Course 4	Sustainable Agriculture and Food Systems This course	20 h
Course 5	Renewable Energy and Green Infrastructure	20 h
Course 6	Impact Investing	20 h

Fees and the Executive Certificate

Each course costs USD 200. The six courses taken together cost USD 1,000. Completing all six earns the IISF Executive Certificate in Sustainability and Sustainable Finance.

Short courses and the CSFP

A short course is assessed by online quiz. The Chartered Sustainable Finance Professional (CSFP) is a designation earned by proctored examination. The short courses carry no exemption from the CSFP examinations, and they are useful preparation for Level I.

About IISF

The International Institute for Sustainable Finance (IISF) is a professional body that sets standards of competence and conduct for sustainable finance, transition capital, climate risk, and responsible investment. It awards the CSFP designation.

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