



Anreizsysteme für Ökosystemleistungen (IES)

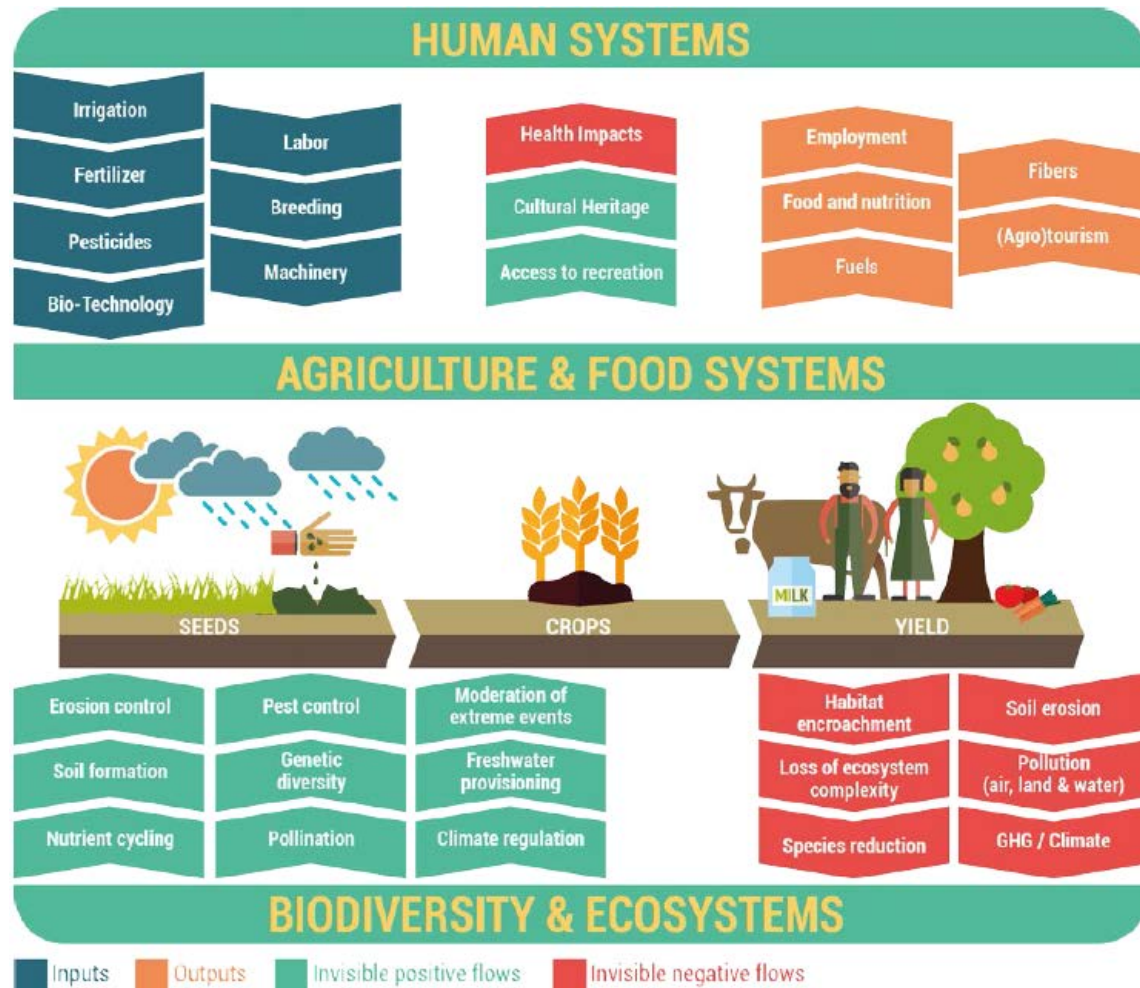
Beispiele in Entwicklungsländern

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Verbundene Systeme



TEEB (2015) *TEEB for Agriculture & Food: an interim report*, United Nations Environment Programme, Geneva, Switzerland.



Die Arbeiten der FAO zu Ökosystemleistungen

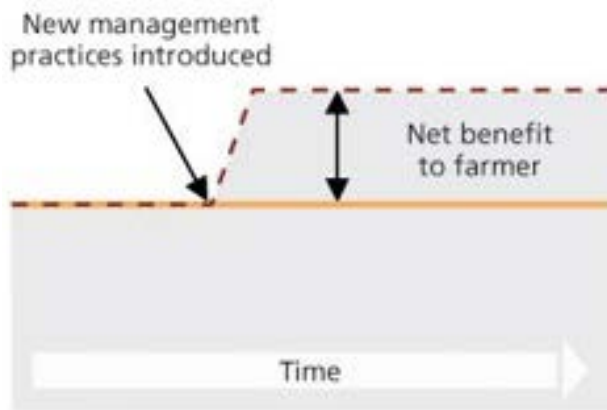
Make agriculture, forestry and fisheries more productive and sustainable

- Increasing **resource use efficiency**, → higher productivity with reduced levels of inputs → **minimizing negative externalities**;
- Managing ecological, social and economic **risks** related to agriculture (e.g. pests, diseases and climate change);
- Identifying and enhancing the **role of ecosystem services**, → effects on resource use efficiency, response to risks, contribution to environmental conservation;
- Facilitating access to needed **information and technologies**.

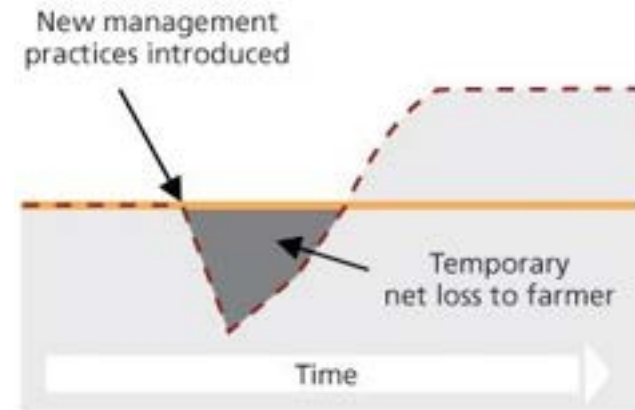


Hürden beim Wechsel zu nachhaltigen Produktionsverfahren

Informationsbarriere



Investitionsbarriere



— Baseline net income - - - Current net income - - - Yield



Hürden beim Wechsel zu nachhaltigen Produktionsverfahren

Ertragsrückgang



Kostenanstieg



— Baseline net income - - - Current net income - - - Yield

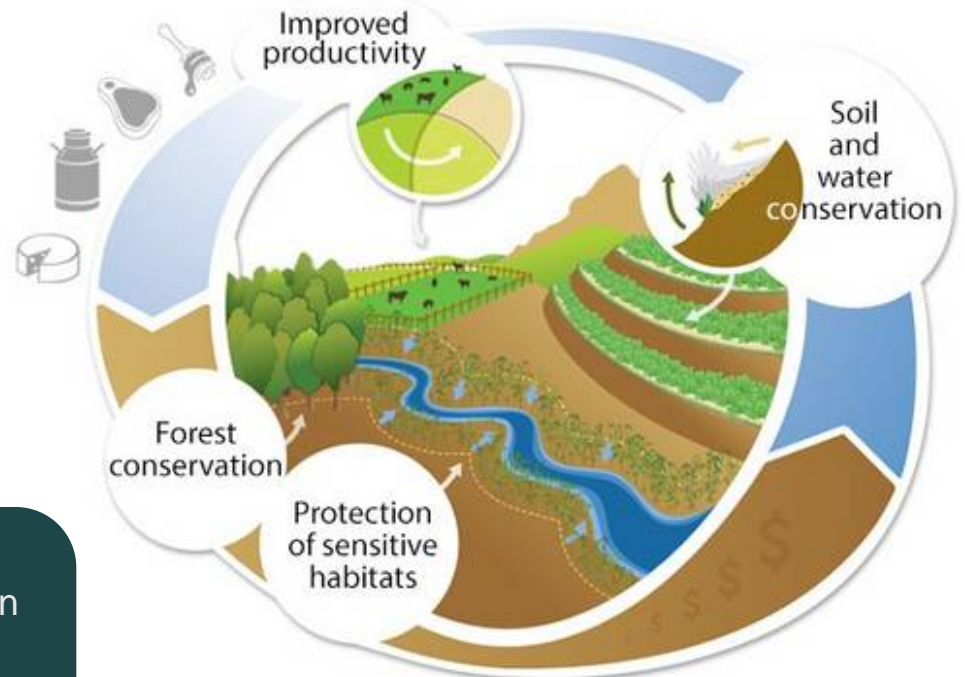


Incentives for Ecosystem Services

Ein integriertes Paket - Kooperation und Koordination

Ohne Anreize sind Landwirte kaum in der Lage Zeit und das nötige Kapital zu investieren, um nachhaltige Produktionsverfahren zu implementieren.

Ein IES Set soll durch die geschickte **Kombination** von Aktivitäten und Programmen Bauern im Übergang zu einer nachhaltigeren Produktion unterstützen. Wenn es gelingt, dass der Übergang durch die **Nutzer** der Ökosystemleistungen **finanziert** wird, ist die Bereitstellung nachhaltiger abgesichert.



Dieses Set soll Landwirtinnen und Landwirte zu unterstützen, **Massnahmen** zu ergreifen die der **Umwelt schonen** und so langfristig einen Beitrag zur **Ernährungssicherheit** leisten.



Incentives for Ecosystem Services

Das IES-Projekt an der FAO will

- Länder unterstützen in der Suche wie Hürden bei der Implementierung nachhaltiger Produktionsverfahren überwunden werden können
- Die institutionelle Koordination auf Länderebene unterstützen
- Akteure bei der Gestaltung von integrierten Sets von Anreizen, unterstützen welche es Landwirtinnen und Landwirte ermöglichen soll ihre Lebensbedingungen langfristig zu verbessern

Das Projekt

- Erstellt Fallstudien um den Mechanismus von IES besser zu verstehen (Motivation der Bauern und des Privat Sektors sowie die institutionellen und politischen Rahmenbedingungen)
- Webtool
- Foren um sich auszutauschen
- Fokus-Länder unterstützen im Design von Rahmenbedingungen



Beispiel - Rio Rural Brasilien

Nature reserves
within properties
and monitoring of
ecosystem
services
\$ CEPF
\$ Conservation
International
\$ Mata Atlantica



Water recharge buffer
\$ Programa Productor de Agua
\$ CEPF

Rotational grazing
\$ EMATER (increased productivity reduce pressure on
remaining forest)
\$ BMBF/ University of Cologne

with soil conservation and gully plugging along
the water line
\$ Programa Productor de Agua

Improved fodder:
sugar cane silage to
reduce herd size and
GHG emissions
\$ EMATER (technical
assistance)
\$ INTECRAL

Fenced water spring
\$ Programa Productor de
Agua, from water users

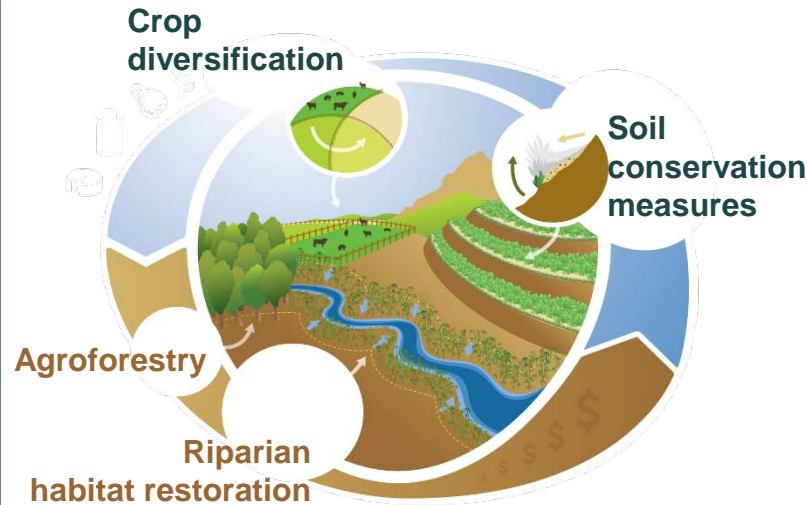


Beispiel Lake Naivasha

Herausforderung

ECOSYSTEM THREATS

- Steep slope deforestation
- Agricultural expansion and overgrazing in riparian habitats
- Soil erosion causing sedimentation
- Agrochemical pollution causing eutrophication
- Increased abstraction of and conflict over water resources
- Introduction of exotic fish



BEST PRACTICES

- Reforestation, agroforestry and alternative woodlot development; alternative energy sources and energy efficient stoves
- Structural soil conservation measures (Conservation agriculture – agroforestry, minimum tillage, organic fertilizers, crop rotation)
- Improved irrigation and water management

INCENTIVES:

- **Capital to support:**
 - Restoration of riparian habitats
 - Afforestation and agroforestry development
 - Improved agricultural practices
 - Soil erosion and improved water management
 - Aquaculture development
- **Technical assistance and support to:**
 - Improve agroforestry and agricultural practices
 - Implement soil erosion control measures
 - Improve irrigation infrastructure
 - Development of alternative livelihoods
 - Access to higher-value markets
 - Stakeholder participation in resource management to reduce conflict



Beispiel Lake Naivasha

Set von Anreizen

Combined				
Best Practices	Financed by	Incentive	Technical/ Coordination Support by	Activity
Landscape restoration <ul style="list-style-type: none"> Restoration and maintenance of riparian habitats Soil conservation measures Agroforestry development 	\$ DGIS, CARE-Canada, Marks and Spencer, Goldman US Current – EKN through IWRAP	<ul style="list-style-type: none"> Restoration of riparian habitats, installing conservation structures on farms (terraces, agroforestry) Training of farmers (support SDoA to conduct these activities) 	IMARISHA	<ul style="list-style-type: none"> Monitoring of environmental impacts Coordinates basin restoration, use and sustainable development with public, private and development partners
	\$ LNGG (pioneer); Currently – 3 export horticulture farms, 2 hotels, 1 Government agency	<ul style="list-style-type: none"> Coupon for agriculture implements (up to 2014) From 2015 the monies collected will be put directly to conservation structures and training 	WRUAs	<ul style="list-style-type: none"> Selection and Coordination of farmers and buyers Monitoring Overall co-management of water resources in their areas
Increased sustainable agricultural productivity <ul style="list-style-type: none"> Improved irrigation, water allocation and management capacity Reduced agro-chemical use Improved crop varieties 	\$ IWRAP – WWF and partners	<ul style="list-style-type: none"> Restoration of riparian habitats, catchment forests Support to WRUA development Support to water management and governance 	KFS	<ul style="list-style-type: none"> Coordination of restoration efforts, identification of good quality seedlings and species for restoration
	INWaSP	<ul style="list-style-type: none"> Finance towards restoration of riparian areas and springs Improved water infrastructure Support to WRUA development 	SDoA	<ul style="list-style-type: none"> Training on conservation agriculture, appropriate chemical usage Business and farm planning Access to good quality seeds
Livelihood diversification <ul style="list-style-type: none"> Improved marketing and value-chain development 	ASDSP – Ministry of Agriculture, Livestock and Fisheries SNV – Dairy production	<ul style="list-style-type: none"> Training in livestock and pasture management; value chains for dairy, fish and potatoes Dairy production improvements 	WRMA	<ul style="list-style-type: none"> Monitor, regulate and enforce water resources use and rules within the basin Support WRUAs to assist with management of the water resource



Beispiel Lake Naivasha

Impact



Food security and Nutrition

- **Increased productivity and resilience** through:
 - Improved soil retention and fertility from soil erosion control measures, organic fertilizers, minimum-tillage and crop rotation
 - Increased provision of fodder from grass strips resulting in improved dairy productivity
 - Production of fruits for household nutrition and income generation
 - Formation of small marketing groups for potatoes and dairy, as well as fruits to access markets without middle-men



Water

- **Increased water retention** within catchment and **reduced run-off** from construction of soil erosion control measures.
- **Protection of riparian habitats**, which also acts as a bio-filter to decrease sedimentation.



Climate Change & Resilience

- Sustainable agriculture practices and diversified livelihoods **increasing resilience** to climate change
- Improved forest cover through agroforestry **increasing carbon capture and** reducing loss of native forest cover and carbon sink



Landscape

- **Restoration of vegetative cover** along steep slopes through agriculture within terraces and agroforestry development.
- **Reduced reliance** on forests for wood fuel



Beispiel Mexico

IES

Best practices:

Biodiversity conservation

- Zoning of land use areas within and surrounding forest habitats to limit growth of the agricultural frontier and improved habitat connectivity
- Ecosystem services monitoring



Financed by:

CBMM – Special Program for the Lacandona
\$ CONABIO

Incentives from the programmes/ investors:

- Monitoring ecosystem outcomes
- Multiple use zoning of land use areas
- Finance to transition to sustainable *milpa* agriculture and agroforestry, reducing pressure to deforest



Restoration and protection of forest cover

- Forest conservation in water recharge area and riparian habitats
- Forest restoration



PES

\$ PRONAFOR (PSAH, PSA-CABSA)
\$ PRORRIM

- Finance:
- For afforestation, forest protection and management of water recharge area
- To reconvert maize plantations to forest and agroforestry production



Increased sustainable agricultural productivity

- Improved integrated agricultural practices, including *milpa*, agroforestry and silvopasture system development
- Soil conservation practices and improved irrigation systems
- Crop diversification



\$ MasAgro
\$ COUSSA
\$ PROMAF
\$ PUSRN
\$ PROGAN
\$ PROCAMPO

- Technological assistance to transition to sustainable agricultural practices
- Finance for improved breeds of beans, maize, cattle and wheat, sustainable production investments, organic fertilizers and improved irrigation infrastructure



Livelihood diversification and strengthened local capacity

- Development of alternative income generation opportunities



\$ Certificacion para la Productividad Agroalimentaria
\$ PESA
\$ PAAP
\$ Banamex

- Development of market for certified coffee production
- Investment in production, harvesting and processing equipment
- Sustainable development of marginalized rural communities
- Finance to develop ecotourism infrastructure



Incentive Type Key:

- Regulatory compliance
- Water availability risks
- Water quality risks

- CSR / Reputational risk
- Biodiversity protection
- Local livelihoods

- Wildfire risk
- Climate change risk
- Protection of existing or planned infrastructure

- Cost abatement
- Weather-related risks



<http://www.fao.org/ecosystem-services-biodiversity/incentives/en/>

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Ein Spektrum verschiedener Anreize

