EX-ACT version 9
Start

Description of
project

Land-use
changes

EX-ACT version 9 is based on the 2019 Refinement to the 2006 IPCC Guidelines for N

EX-Ante Carbon-balance T

Map conforms to United Nations World map, May 2020
The boundaries and names shown and the designations used on this map do not imply th
legal status of any country, territory, city or area or of its authorities, or concerning the deli

EX-ACT is a designed to support decision makers within the governments, private sector anc
intervention scenarios in the AFOLU sector, as well as for on-going and ex-post evaluations.

EX-ACT v9 has been developped by FAO's Agrifood Economics Division with the support of tl

Website: http://www.fao.org/tc/exact/ex-act-home/en/

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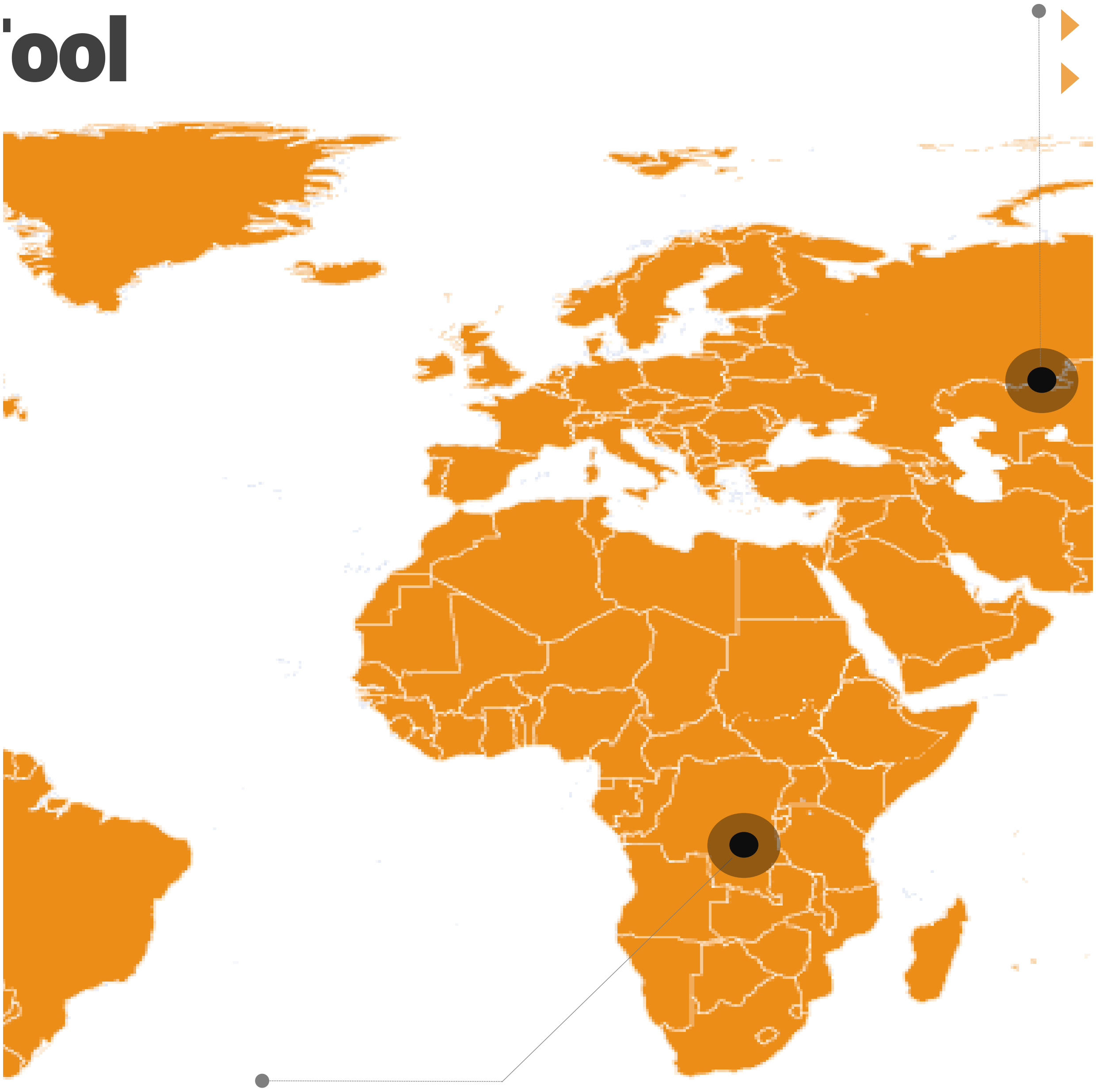
Cropland management

Grassland & Livestock

Forest management

Inland wetlands Aqu

'ool



- Livestock intensification
- Agroforestry
- Food security
- Locust impact

l civil society organizations to calculate greenhouse gas emissions using IPCC methdoologies. EX

he World Bank and Agence Française de Développement.

Climate resilience

Sustainable management

- Peatland restoration
- Coastal management
- Watershed management
- Climate adaptation

-ACT can be used in the project (or programme) design phase via ex-ante evaluation of

r updating the data and assumes no responsibility for errors and omissions in the data provided. Users are, however, kindly

Food and Agriculture Organization of the United Nations

English

EX-ACT version 9 Start | Description of project | Land-use changes

1. DESCRIPTION

1.1 Project description

User Name	Ena Shin
Date	9/1/2022
Project name	ADDITIONAL FINANCING - YEMEN FOOD SECURITY RESPONSE AND
Project code	P178439
Project cost (in USD)	
Funding agency	World bank
Executing agency	FAO, SFD
Project status	Design

Cropland management | Grassland & Livestock | Forest management | Inland wetlands & Aqua.

1.2 Project site and duration

Continent	Western Asia	
Country	Yemen	
Climate	Tropical	
Moisture	Dry	
Soil type	High activity clay soils	
Project duration (in years)	*Implementation Phase*	5
	Capitalization Phase	15
	Total Duration of Accounting	20

Coastal wetlands
& Fish/Aqua.

Inputs &
Investments

Detailed
results

Climate?

Soil?

EX-ACT version 9 Start	Description of project	Land-use changes

2.1 DEFORESTATION

Type of vegetation that will be deforested	?	HWPs (tDM/ha)	Fire used? (y/n)
Please select		0	NO
Please select		0	NO
Please select		0	NO
Please select		0	NO
Please select		0	NO
Please select		0	NO
Please select		0	NO
Please select		0	NO

*The selection of "D" corresponds to a default (linear) dynamics of change. Other sele

2.2 AFFORESTATION & REFORESTATION

Final land-use		Fire used? (y/n)
Please select		NO
Please select		NO
Please select		NO
Please select		NO
Please select		NO

Please select	NO
Please select	NO
Please select	NO

*The selection of "D" corresponds to a default (linear) dynamics of change. Other sele

2.3 OTHER LAND-USE CHANGES

User notes	Fire used? (y/n)
Component 1 - Terracing (coffee, sorghum)	NO
	NO
Component 3 - kitchen gardens	NO
Component 3 - kitchen gardens	NO
	NO
	NO
	NO
	NO
	NO
	NO

*The selection of "D" corresponds to a default (linear) dynamics of change. Other sele

Cropland management | Grassland & Livestock | Forest management | Inland we

Final land-use after deforestation		Forested area (ha)		
Land-use type	Agroforestry system	Start	Without	*
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D

ection options include "I" for immediate changes and "E" for exponential - please refer to the guidelines for fur

Initial land-use	Initial agroforestry systems	Reforested are	
		Without	*
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D

Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D

ection options include "I" for immediate changes and "E" for exponential - please refer to the guidelines for fur

Initial land-use	Final land-use	Area of land-us Without	*
Annual fallow	Agroforestry - default	2,000	D
Annual fallow	Please select	0	D
Grassland	Annual cropland	0	D
Other land (non-vegetated)	Annual cropland	0	D
Grassland	Silvopasture	0	D
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D

Total r

ection options include "I" for immediate changes and "E" for exponential - please refer to the guidelines for fur etlands & Aqua. | Coastal wetlands & Fish/Aqua. | Inputs & Investments

If country-specific data are available, please go to Tier 2: Tier 2

With	*	Deforested area (ha) Without	With	Total emissions (tCO2-e) Without	With
0	D	0	0	0	0
0	D	0	0	0	0
0	D	0	0	0	0
0	D	0	0	0	0
0	D	0	0	0	0
0	D	0	0	0	0
0	D	0	0	0	0
0	D	0	0	0	0
Total deforestation (tCO2-e)				0	0

ther explanation of these assumptions.

If country-specific data are available, please go to Tier 2: Tier 2

ea (ha) With	*	Total emissions (tCO2-e) Without	With
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0

0	D	0	0
0	D	0	0
0	D	0	0
Total af/re forestation (tCO2-e)		0	0

ther explanation of these assumptions.

If country-specific data are available, please go to Tier 2: Tier 2

se change (ha)		Total emissions (tCO2-e)	
With	*	Without	With
0	D	1,059	0
0	D	0	0
315	D	0	544
315	D	0	-4,177
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
non forest land-use change (tCO2-e)		1,059	-3,633

ther explanation of these assumptions.

Detailed results

Balance
0
0
0
0
0
0
0
0
0

Balance
0
0
0
0
0

0
0
0
0

Balance
-1,059 ▼
0
544 ▲
-4,177 ▼
0
0
0
0
0
0
-4,692 ▼

[redacted]

2.1 DEFORESTATION

Type of vegetation that will be deforested	All units are in tC/ha Above-ground	
	Default	Tier 2
Please select	0.0	
Please select	0.0	
Please select	0.0	
Please select	0.0	
Please select	0.0	
Please select	0.0	
Please select	0.0	
Please select	0.0	

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values a

2.2 Afforestation and Reforestation

Final land uses after affo/reforestation	Above-ground bioma (≤ 20 years) tC/ha/yr	
	Default	Tier 2
Please select	0.00	
Please select	0.00	
Please select	0.00	
Please select	0.00	
Please select	0.00	

Please select	0.00
Please select	0.00
Please select	0.00

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values a

2.3 OTHER LAND-USE CHANGES

	Initial land use		
		All units are in tC/ha	
User notes		Biomass	
		Default	Tier 2
Component 1 - Terracing (coffee, sorg	Annual fallow	4.7	
#REF!	Annual fallow	4.7	
#REF!	Grassland	4.1	
Component 3 - kitchen gardens	Other land (non-vegetated)	0.0	
	Grassland	4.1	
	Please select	0.0	
	Please select	0.0	
	Please select	0.0	
	Please select	0.0	
	Please select	0.0	

Below-ground		Litter		Dead wood	
Default	Tier 2	Default	Tier 2	Default	Tier 2
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	

automatically wherever specified.

ss growth		Below-ground biomass growth			
(> 20 years) tC/ha/yr		(≤ 20 years) tC/ha/yr		(> 20 years) tC/ha/yr	
Default	Tier 2	Default	Tier 2	Default	Tier 2
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	

0.00			0.00			0.00	
0.00			0.00			0.00	
0.00			0.00			0.00	

automatically wherever specified.

		Final land use	In tC/ha in the first year		in tC/ha
Soil carbon			Biomass		Soil carbon
Default	Tier 2		Default	Tier 2	Default
19.5	14.3	Agroforestry - default	3.5		21.2
19.5	14.3	Please select	0.0		0.0
21.0	15.4	Annual cropland	4.7		19.3
21.0	15.4	Annual cropland	4.7		19.3
21.0	15.4	Silvopasture	3.9		21.2
0.0		Please select	0.0		0.0
0.0		Please select	0.0		0.0
0.0		Please select	0.0		0.0
0.0		Please select	0.0		0.0
0.0		Please select	0.0		0.0

Back

Soil carbon

Default	Tier 2
0.0	
0.0	
0.0	
0.0	
0.0	
0.0	
0.0	
0.0	

Back

Litter		Dead wood		Soil	
tC/ha		tC/ha		tC/ha	
Default	Tier 2	Default	Tier 2	Default	Tier 2
0.00		0.00		0.0	
0.00		0.00		0.0	
0.00		0.00		0.0	
0.00		0.00		0.0	
0.00		0.00		0.0	

0.00	0.00	0.0
0.00	0.00	0.0
0.00	0.00	0.0

Back

n

Tier 2
15.6
0.0
14.2
14.2
15.6

[redacted]

[redacted]

[redacted]

EX-ACT Version 9 Start | Description of project | Land-use change

3.1. ANNUAL CROPPING SYSTEMS (to be used also for pluri

3.1.1. Annual cropping systems from other LU or converted to other L

Description	Main season crop
Annuals after deforestation	Default
Annuals converted to forest land	Default
Annuals converted from non-forest LUs	Default
Annuals converted to non-forest LUs	Default

3.1.2. Annual cropping systems remaining annual cropping systems (

User notes	Main season crop
You can use it to describe your system	
Component 2 - Seed production	Grains
Component 2 - Seed production	Grains
Component 2 - Fodder production Improvmente	Grains
Component 2 - Fodder production Improvmente	Grains
Component 2 - Fodder production Improvmente	Grains
Component 2 - Sesame production	Grains
Component 2 - Sesame production	Grains
Component 3 - Kitchen garden	Default
Component 3 - Kitchen garden	Default
	Default

If country-specific data are available, please go to:

*The selection of "D"corresponds to a default (linear) dynamics of change. Other sele

3.2. PERENNIAL CROPPING SYSTEMS (e.g. agroforestry, orc

3.2.1. Perennial systems from other LU or converted to other LU

Description	Agroforestry systems
Perennials after deforestation	Please select
Perennials converted to forest land	Please select
Perennials converted from other LUs	Please select
Perennials converted to other LUs	Please select

3.2.2. Perennial systems remaining perennial systems (total area mus

User notes	Agroforestry systems
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select

*The selection of "D"corresponds to a default (linear) dynamics of change. Other sel

3.3. FLOODED RICE SYSTEMS

3.3.1. Flooded rice systems from other land-use or converted to othe

Description	Cultivation period (days)
Rice after deforestation	113
Rice converted to forest land	113
Rice converted from non-forest LUs	113
Rice converted to non-forest LUs	113

Total flooded-rice systems (tCO2-e)

User notes	Cultivation period (days)
	113
	113
	113
	113
	113
	113
	113
	113
	113
	113

*The selection of "D"corresponds to a default (linear) dynamics of change. Other sele

**In case of flooded rice the total area considered for emissions calculations may be

es | Cropland management | Grassland & Livestock | Forest management

-annual systems such as cotton or sugarcane)

U

Management options for annual cropping systems

Tillage management	Input of organic material
Please select	Please select
Please select	Please select
Full tillage	High C input, no manure
Please select	Please select

total area must remain constant)

Management options for annual cropping systems

Tillage management	Input of organic material
Full tillage	Low C input
Full tillage	Medium C input
Reduced tillage	Low C input
Reduced tillage	Low C input
Reduced tillage	Medium C input
Reduced tillage	Medium C input
Reduced tillage	High C input, no manure
Full tillage	Low C input
Full tillage	High C input, no manure
Please select	Please select

ection options include "I" for immediate changes and "E" for exponential - please refer to the guideline chards, tree crops etc.)

Management options for perennial cropping systems	
Tillage management	Input of organic material ?
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select

st remain constant)

Management options for perennial cropping systems	
Tillage management	Input of organic material ?
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select

ection options include "I" for immediate changes and "E" for exponential - please refer to the guideline

r land-use (please fill 'Land-use change' module)

Management options for water regime in flooded-rice		
During cultivation period	Before cultivation period	?
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	

Management options for water regime in flooded-rice		
During cultivation period	Before cultivation period	?
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	

Please confirm total area of flooded rice remaining flooded rice (ha)

ection options include "I" for immediate changes and "E" for exponential - please refer to the guideline

e greater than actual total land under flooded rice if multicropping seasons are in place. It is key to pro

Inland wetlands & Aqua. | Coastal wetlands & Fish/Aqua. | Inputs & investments

If country-specific data are available, p

Residue management	Yield (t/ha/yr)	Area (ha) Start	Without	With
Please select		0	0	0
Please select		0	0	0
Exported		0	0	630
Please select		0	0	0

Residue management	Yield (t/ha/yr)	Area (ha) Start	Without	*	With	*
Exported		5,440	5,440	D	0	D
Exported		0	0	D	5,440	D
Exported		2,800	2,800	D	0	D
Exported		0	0	D	1,120	D
Retained		0	0	D	1,680	D
Retained		9,520	9,520	D	0	D
Retained				D	9,520	D
Please select		20,000	20,000	D	4,000	D
Please select		0	0	D	16,000	D
Please select		0	0	D	0	D
	Total (ha)	37,760	37,760		37,760	

Total annual cropping systems (tCO2-e)

s for further explanation of these assumptions.

If country-specific data are available, p

Residue/ Biomass burning	Yield (t/ha/yr)	Area (ha) Start	Without	With
NO		0	0	0
NO		0	0	0
NO		0	2,000	0
NO		0	0	0

Residue/ Biomass burning	Yield (t/ha/yr)	Area (ha) Start	Without	*	With	*
NO		0	0	D	0	D
NO		0	0	D	0	D
NO		0	0	D	0	D
NO		0	0	D	0	D
NO		0	0	D	0	D
NO		0	0	D	0	D
NO		0	0	D	0	D
NO		0	0	D	0	D
NO		0	0	D	0	D
NO		0	0	D	0	D
	Total (ha)	0	0		0	

Total perennial cropping systems (tCO2-e)

s for further explanation of these assumptions.

If country-specific data are available, please

Organic amendment	Yield (t/ha/yr)	Area (ha)		
		Start	Without	With
Please select		0	0	0
Please select		0	0	0
Please select		0	0	0
Please select		0	0	0

Organic amendment	Yield (t/ha/yr)	Flooded-rice area (ha)				
		Start	Without	*	With	*
Please select		0	0	D	0	D
Please select		0	0	D	0	D
Please select		0	0	D	0	D
Please select		0	0	D	0	D
Please select		0	0	D	0	D
Please select		0	0	D	0	D
Please select		0	0	D	0	D
Please select		0	0	D	0	D
Please select		0	0	D	0	D
Please select		0	0	D	0	D
	Total (ha)**	0	0		0	

0 Total flooded-rice systems (tCO2-e)

s for further explanation of these assumptions.

ovide the actual area under flooded rice in cell K122 to ensure correct area aggregation in the result

Detailed results

please go Tier 2

Total emissions (tCO_2 eq)

Without	With	Balance
0	0	0
0	0	0
0	-1,562	-1,562
0	0	0

Total emissions (tCO_2 eq)

Without	With	Balance
40,641	5,080	-35,561 ▼
0	22,579	22,579 ▲
22,369	2,796	-19,573 ▼
0	7,829	7,829 ▲
0	9,916	9,916 ▲
64,217	8,027	-56,189 ▼
0	38,196	38,196 ▲
206,431	61,929	-144,502 ▼
0	49,543	49,543 ▲
0	0	0
333,658	204,333	-129,325 ▼

please go to Tier 2

Total emissions (tCO_2 eq)

Without	With	Balance
0	0	0
0	0	0
0	0	0
0	0	0

Total emissions (tCO_2 eq)

Without	With	Balance
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

go to Ti Tier 2

Total emissions ($tCO2$ eq)		
Without	With	Balance
0	0	0
0	0	0
0	0	0
0	0	0

Total emissions (tCO_2 eq)		
Without	With	Balance
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

ts.

[redacted]

[redacted]

3.1. ANNUAL CROPPING SYSTEMS (to be used also for pluri-annual syst

3.1.1. Annual cropping systems from other LU or converted to other LU

Description	Main season c
	Soil carbon (tC
	tC/ha
	Default
Annuals after deforestation	0.0
Annuals converted to forest land	0.0
Annuals converted from non-forest LUs	19.3
Annuals converted to non-forest LUs	0.0

3.1.2. Annual cropping systems remaining annual cropping systems (total area must

	Main season c
	Soil
	tC/ha
	Default
#REF!	21.00
Component 2 - Seed production	21.00
#REF!	21.00
#REF!	21.00
#REF!	21.00
Component 2 - Seed production	21.00
Component 2 - Fodder production Improvmente	21.00
Component 2 - Fodder production Improvmente	21.00
#REF!	21.00
Component 2 - Fodder production Improvmente	0.00

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values auto

3.2. Perennial cropping systems

3.2.1. Perennial systems from other LU or converted to other LU

Perennial systems from (or to) other land uses	Above-ground tC/ha/yr Default
Perennials after deforestation	0.00
Perennials converted to forest land	0.00
Perennials converted from non-forest LUs	0.00
Perennials converted to non-forest LUs	0.00

3.2.2. Perennial systems remaining perennial systems (total area must remain cons

Perennial systems remaining perennial systems	Above-ground tC/ha/yr Default
Please select	0.00
Please select	0.00
Please select	0.00
Please select	0.00
Please select	0.00
Please select	0.00
Please select	0.00
Please select	0.00
Please select	0.00
Please select	0.00

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values auto

3.3. Flooded rice systems

3.3.1. Flooded rice systems from other land-use or converted to other land-use (ple

Flooded rice systems from (or to) other LU	Cultivation period days Default	Tier 2
Rice after deforestation	113	
Rice converted to forest land	113	
Rice converted from non-forest LUs	113	
Rice converted to non-forest LUs	113	

3.3.2. Flooded rice systems remaining flooded rice systems

Flooded rice syst remaining rice systems Description	Cultivation period days Default	Tier 2
	113	
	113	
	113	
	113	
	113	
	113	
	113	
	113	
	113	
	113	

Use this part only if you want to refine the analysis at Tier 2

IPCC default values are provided for your information only; EX-ACT will use Tier 2 values auto

tems such as cotton or sugarcane)

crop

C/ha)		Tillage factor		Input factor		Residue/Biomass ava t dm/ha	
Tier 2		Default	Tier 2	Default	Tier 2	Default	Tier 2
		0.00		0.00		3.18	
		0.00		0.00		3.18	
		1.00		1.04		3.18	
		0.00		0.00		3.18	

t remain constant)

crop

	Land use factor		Tillage factor		Input factor		Residue/Biomass ava t dm/ha	
Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
15.20	0.92		1.00		0.95		3.18	
15.20	0.92		1.00		1.00		3.18	
15.20	0.92		0.99		0.95		3.18	
15.20	0.92		0.99		0.95		3.18	
15.20	0.92		0.99		1.00		3.18	
15.20	0.92		0.99		1.00		3.18	
15.20	0.92		0.99		1.04		3.18	
	0.92		1.00		0.95		3.18	
	0.92		1.00		1.04		3.18	
	0.00		0.00		0.00		3.18	

omatically wherever specified.

	Below-ground		Soil carbon				Tillage factor	
	tC/ha/yr		tC/ha					
Tier 2	Default	Tier 2	Default	Tier 2			Default	Tier 2
	0.00		0.0				0.00	
	0.00		0.0				0.00	
	0.00		0.0				0.00	
	0.00		0.0				0.00	

stant)

	Below-ground		Soil carbon		Land use factor		Tillage factor	
	tC/ha/yr		tC/ha					
Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	
	0.00		0.00		0.00		0.00	

omatically wherever specified.

ase fill 'Land-use change' module)

Daily emission factor for rice EF = EF-basis x SF-Before x CF

EFc and EFi are in kg CH4 per ha per day

Soil carbon tC/ha		EFc		SFw		SFp
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default
28.4		1.19		0.00		0.00
28.4		1.19		0.00		0.00
28.4		1.19		0.00		0.00
28.4		1.19		0.00		0.00

Daily emission factor for rice EF = EF-basis x SF-Before x CF

EFc and EFi are in kg CH4 per ha per day

Soil carbon tC/ha		Land use factor		EFc		SFw		SFp
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2	Default
0.00		0.00		1.19		0.00		0.00
0.00		0.00		1.19		0.00		0.00
0.00		0.00		1.19		0.00		0.00
0.00		0.00		1.19		0.00		0.00
0.00		0.00		1.19		0.00		0.00
0.00		0.00		1.19		0.00		0.00
0.00		0.00		1.19		0.00		0.00
0.00		0.00		1.19		0.00		0.00
0.00		0.00		1.19		0.00		0.00
0.00		0.00		1.19		0.00		0.00

omatically wherever specified.

Minor season crop

Crop type	Yield t/ha/yr	Residue management
None		Please select
None		Please select
None		Please select
None		Please select

Minor season crop

Crop type	Yield t/ha/yr	Residue management
None		Please select
None		Please select
None		Please select
None		Please select
None		Please select
None		Please select
None		Please select
None		Please select
None		Please select
None		Please select

Back

Input factor		Residues burned		Fire periodicity	
		tdm/ha		year	
Default	Tier 2	Default	Tier 2	Default	Tier 2
0.00		10		1	
0.00		10		1	
0.00		10		1	
0.00		10		1	

Input factor		Residues burned		Fire periodicity	
		tdm/ha		year	
Default	Tier 2	Default	Tier 2	Default	Tier 2
0.00		10		1	
0.00		10		1	
0.00		10		1	
0.00		10		1	
0.00		10		1	
0.00		10		1	
0.00		10		1	
0.00		10		1	
0.00		10		1	
0.00		10		1	

Back

-or Amendment

					Rice straw (Main season crop)	
	SFo		EFi		t dm/ha	
Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	

-or Amendment

					Rice straw (Main season crop)	
	SFo		EFi		t dm/ha	
Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	
	0.00		0.00		0.00	

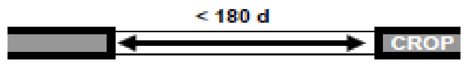
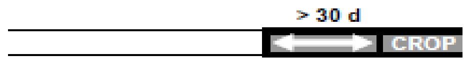
Back

Residue/Biomass available
t dm/ha

Default	Tier 2
0.00	
0.00	
0.00	
0.00	

Residue/Biomass available
t dm/ha

Default	Tier 2
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	
0.00	

Non flooded pre-season <180 d	
Non flooded pre-season >180 d	
Flooded pre-season (>30 d)[a,b]	
Non-flooded pre-season >365 d [c]	

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

4.1. GRASSLAND MANAGEMENT

4.1.1. Grassland systems from other land-use or converted to other lar

Description

Grassland systems from (or to) other LU	Start
Grasslands after deforestation	
Grasslands converted to forest land	
Grasslands after non-forest LUs	
Grasslands converted to non-forest LUs	Non-degraded

4.1.2. Grassland systems remaining grassland systems (total area mu

User notes	Start
	High intensity grazing
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select

*The selection of "D" corresponds to a default (linear) dynamics of change. Other selection options

4.2 LIVESTOCK AND MANURE MANAGEMENT

	User notes
Livestock system#1	Component 2.1.b. Vaccination
Livestock system#2	Component 2.1.b. Vaccination
Livestock system#3	
Livestock system#4	
Livestock system#5	
Livestock system#6	
Livestock system#7	
Livestock system#8	
Livestock system#9	
Livestock system#10	
Livestock system#11	

*The selection of "D" corresponds to a default (linear) dynamics of change. Other selection

B

Definitions of grassland management options

Non – degraded (Nominally managed)	Represents low or medium intensity g above-ground vegetation, without sig
High Intensity Grazing	Represents high intensity grazing sys composition and possibly productivi degraded, but do not represent exces
Improved grassland	Represents grassland which is sustai (or cutting and removal of vegetation (e.g., fertilization, species improveme
Improved grassland with medium inputs	Applies to improved grassland where
Improved grassland with high inputs	Applies to improved grassland where have been used (beyond that require

Cropland management	Grassland & Livestock	Forest management	Inland wetlar A

nd-use (please fill 'Land-use change' module)

Grassland management		Fire management &	
Without	With	Without	
		(y/n)	Year
		NO	5
		NO	5
		NO	5
Non-degraded		NO	5

ıst remain constant)

Grassland management		Fire management &	
Without	With	Without	
		(y/n)	Year
High intensity grazing	Non-degraded	NO	5
Please select	Please select	NO	5
Please select	Please select	NO	5
Please select	Please select	NO	5
Please select	Please select	NO	5
Please select	Please select	NO	5
Please select	Please select	NO	5
Please select	Please select	NO	5
Please select	Please select	NO	5
Please select	Please select	NO	5

include "I" for immediate changes and "E" for exponential - please refer to the guidelines for further explanatio

Livestock categories ?	Livestock productivity ?
Dairy sheep	
Goats	Default
Please select	
Please select	
Please select	
Please select	
Please select	
Please select	
Please select	
Please select	
Please select	

options include "I" for immediate changes and "E" for exponential - please refer to the guidelines for fu

nds & Aqua. | Coastal wetlands & Fish/Aqua. | Inputs & investments | Detailed results

& periodicity		Yield (t/ha/year)			Area (ha)	
With						
(y/n)	Year	Start	Without	With	Start	Without
NO	5				0	0
NO	5				0	0
NO	5				0	0
NO	5				315	315

& periodicity		Yield (t/ha/year)			Area (ha)		
With							
(y/n)	Year	Start	Without	With	Start	Without	*
NO	5				0	0	D
NO	5				0	0	D
NO	5				0	0	D
NO	5				0	0	D
NO	5				0	0	D
NO	5				0	0	D
NO	5				0	0	D
NO	5				0	0	D
NO	5				0	0	D
NO	5				0	0	D

Total gras

n of these assumptions.

Production (meat, milk, etc) in tonnes of product per year			Livestock management Number of heads		
Start	Without	With	Start	Without	
			0	0	D
			0	0	D
			0	0	D
			0	0	D
			0	0	D
			0	0	D
			0	0	D
			0	0	D
			0	0	D
			0	0	D
			0	0	D

ırther explanation of these assumptions.

If country-specific data are available, please go to Tier 2:

	Total emissions (tCO2-e)	
With	Without	With
0	0	0
0	0	0
0	0	0
0	0	0

		Total emissions (tCO2-e)	
With		Without	With
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D		
ssland systems (tCO2-e)		0	0

If country-specific data are available, please go to Tier 2:

		Total emissions (tCO_2 eq)	
With		Without	With
34,345	D	0	117,597
27,476	D	0	86,191
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
0	D	0	0
Total livestock (tCO2-e)		0	203,788

Tier 2

Balance

0
0
0
0

Balance

0
0
0
0
0
0
0
0
0

0

Tier 2

Balance
117,597 ▲
86,191 ▲
0
0
0
0
0
0
0
0
0
203,788 ▲

[redacted]

4.1. GRASSLAND MANAGEMENT

4.1.1. Grassland systems from other land-use or converted to other land-use (please fi

Description	Soil carbon stocks (	
	Start	
Grassland systems from (or to) other LU	Default	Tier 2
Grasslands after deforestation		
Grasslands converted to forest land	21.0	
Grasslands after non-forest LUs		
Grasslands converted to non-forest LUs	15.4	

4.1.2. Grassland systems remaining grassland systems (total area must remain const

	Soil carbon stocks (	
	Start	
Grasslands remaining grasslands	Default	Tier 2
	18.9	
	21.0	
	21.0	
	21.0	
	21.0	
	21.0	
	21.0	
	21.0	
	21.0	
	21.0	

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values

4.2 LIVESTOCK AND MANURE MANAGE

Livestock categories	Livestock productivity		Enteric fermentatio	
			kgCH4/head/year	
			Default	Start
Dairy sheep	Low-productivity		5.0	
Goats	Default		5.0	
Please select		0	0.0	
Please select		0	0.0	
Please select		0	0.0	
Please select	Default		0.0	
Please select	Default		0.0	
Please select	Default		0.0	
Please select	Default		0.0	
Please select	Default		0.0	
Please select	Default		0.0	

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values

Back

ll 'Land-use change' module)

tC/ha)				AGB (t d.m./ha)		Combustion factor (%)	
Without		With					
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
21.0		21.0		0		0.77	
21.0		21.0		0		0.77	
21.0		21.0		0		0.77	
15.4		15.4		2.3		0.77	

tant)

tC/ha)				AGB (t d.m./ha)		Combustion factor (%)	
Without		With					
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
18.9		21.0		2.3		0.77	
21.0		21.0		0.0		0.77	
21.0		21.0		0.0		0.77	
21.0		21.0		0.0		0.77	
21.0		21.0		0.0		0.77	
21.0		21.0		0.0		0.77	
21.0		21.0		0.0		0.77	
21.0		21.0		0.0		0.77	
21.0		21.0		0.0		0.77	
21.0		21.0		0.0		0.77	

automatically wherever specified.

MENT

Manure manage

n		% corresponding to Pasture/Range/Paddock				Emission factors f CH4 from manure m kgCH4/head/year	
Without	With	Default	Start	Without	With	Default	Start
		50%				0.03	
		50%				0.03	
		0%				0.00	
		0%				0.00	
		0%				0.00	
		0%				0.00	
		0%				0.00	
		0%				0.00	
		0%				0.00	
		0%				0.00	
		0%				0.00	

automatically wherever specified.

ement

for Pasture/Range/Paddock

mngt.			N2O from manure mngt.			
			kgN2O/head/year			
Without	With		Default	Start	Without	With
			0.00			
			0.00			
			0.00			
			0.00			
			0.00			
			0.00			
			0.00			
			0.00			
			0.00			
			0.00			
			0.00			

[redacted]

Back

Complementary manure management system ?

	Emission factor CH4		Emission factor N2O	
	kgCH4/head/year		kgN2O/head/year	
	Default	Tier 2	Default	Tier 2
Regional share				
Composting	0.00		0.02	
Composting	#REF!		#REF!	
Regional share				
Composting	#REF!		#REF!	
Composting	#REF!		#REF!	
Please select				
Please select				
Please select				
Please select				
Please select				

EX-ACT Version 9 Start | Description of project | Land-use changes

5.1 FOREST DEGRADATION & MANAGEMEN

Type of forest vegetation that will be managed	Forest degradation lev	
	Start	Without
Please select	Please select	Please select
Please select	Please select	Please select
Please select	Please select	Please select
Please select	Please select	Please select
Please select	Please select	Please select
Please select	Please select	Please select
Please select	Please select	Please select
Please select	Please select	Please select

*The selection of "D" corresponds to a default (linear) dynamics of change. Other selection options include

Cropland management | Grasslands & Livestock | Forest manager

NT

vel		Fire occurrence		Fire periodicity		Impact (% burnt)	
	With	Without (y/n)	With (y/n)	Without (year)	With (year)	Without	With
	Please select	NO	NO	1	1	100%	100%
	Please select	NO	NO	1	1	100%	100%
	Please select	NO	NO	1	1	100%	100%
	Please select	NO	NO	1	1	100%	100%
	Please select	NO	NO	1	1	100%	100%
	Please select	NO	NO	1	1	100%	100%
	Please select	NO	NO	1	1	100%	100%
	Please select	NO	NO	1	1	100%	100%

"I" for immediate changes and "E" for exponential - please refer to the guidelines for further explana ment

Inland wetlands & Aqua.

Coastal wetlands & Fish/Aqua.

Inputs & investm

If country-specific data are available, please

Tier 2

Forested area (ha)					Total emissions (tCO2-e)	
Start	Without	*	With	*	Without	With
0	0	D	0	D	0	0
0	0	D	0	D	0	0
0	0	D	0	D	0	0
0	0	D	0	D	0	0
0	0	D	0	D	0	0
0	0	D	0	D	0	0
0	0	D	0	D	0	0
0	0	D	0	D	0	0
Total forest degradation and management (tCO2-e)					0	0

ation of these assumptions.

ents

Detailed results

Balance
0
0
0
0
0
0
0
0
0

5.1 FOREST DEGRADATION & MANAGE

Type of forest vegetation that will be degraded	Forest degrad Start	
	Default	Tier 2
Please select	?	
Please select	?	
Please select	?	
Please select	?	
Please select	?	
Please select	?	
Please select	?	
Please select	?	

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will

EMENT

dation level (in % of biomass lost)				Carbon pools of non-degraded forest (all values are i				
				Above-ground		Below-ground		Litte
Without		With						
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2	Default
?		?		0.0		0.0		0.0
?		?		0.0		0.0		0.0
?		?		0.0		0.0		0.0
?		?		0.0		0.0		0.0
?		?		0.0		0.0		0.0
?		?		0.0		0.0		0.0
?		?		0.0		0.0		0.0
?		?		0.0		0.0		0.0

use Tier 2 values automatically wherever specified.

Back

n tC/ha)					Soil management and degradation				
er		Dead wood			Soil carbon		Land use, mngt and input factor		
					tC/ha			Start	Without
	Tier 2	Default	Tier 2		Default	Tier 2	Default	Tier 2	Tier 2
		0.0			0.0		1.0		
		0.0			0.0		1.0		
		0.0			0.0		1.0		
		0.0			0.0		1.0		
		0.0			0.0		1.0		
		0.0			0.0		1.0		
		0.0			0.0		1.0		
		0.0			0.0		1.0		

With
Tier 2

6.1 LAND-USE CHANGE ON ORGANIC SOIL

6.1.1 Organic soil management practices asso

Type of vegetation that will be deforested	HWPs (tDM/ha)
Please select	0
Please select	0
Please select	0
Please select	0
Please select	0
Please select	0

*The selection of "D" corresponds to a default (linear) dynamics of c

6.1.2 Organic soil management practices asso

Final land-use

Please select
Please select
Please select
Please select
Please select
Please select

*The selection of "D" corresponds to a default (linear) dynamics of c

6.1.3 Organic soil management practices assoc

User notes

*The selection of "D" corresponds to a default (linear) dynamics of c

LUC

Land mngt.

Peat extract

Aqua.

6.2 LAND MANAGEMENT ON ORGANIC SOIL

6.2.1 Forest management

Type of forest vegetation that will be managed	Forest degradation l
	Start
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select

*The selection of "D" corresponds to a default (linear) dynamics of c

6.2.2 Other land-use management

User notes

*The selection of "D" corresponds to a default (linear) dynamics of c

LUC | Forest mngt. | Land mngt. | Aqua.

6.3 LAND MANAGED FOR PEAT EXTRACTION

User notes

*The selection of "D" corresponds to a default (linear) dynamics of c

6.4 INLAND WATERBODIES

For Mineral soil only - This accounts for CH4 emissions from (i) canals for water su
For aquaculture in coastal wetland based pond go to "Coastal wetlands"

User notes

*The selection of "D" corresponds to a default (linear) dynamics of c

changes | Cropland management | Grassland & Livestock | Forest management

ciated with deforestation

Final land-use after deforestation		Forested area (ha)		
Land-use type	Agroforestry system	Start	Without	*
Please select		0	0	D
Please select		0	0	D
Please select		0	0	D
Please select		0	0	D
Please select		0	0	D
Please select		0	0	D

hange. Other selection options include "I" for immediate changes and "E" for exponential - please refer t

ciated with afforestation / reforestation

Initial land-use		Reforested area (
Land-use cover	Agroforestry system	

	Without	*
Please select	0	D
Please select	0	D
Please select	0	D
Please select	0	D
Please select	0	D
Please select	0	D

hange. Other selection options include "I" for immediate changes and "E" for exponential - please refer t

ciated with other land-use changes

Land-use cover		Converted areas	
Initial land-use	Final land-use		
		Without	*
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D
Please select	Please select	0	D

hange. Other selection options include "I" for immediate changes and "E" for exponential - please refer t

evel		Forested area (ha)		
Without	With	Start	Without	*
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D
Please select	Please select	0	0	D

hange. Other selection options include "I" for immediate changes and "E" for exponential - please refer t

	Total area (ha)		
Land-use cover	Start	Without	*
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D

hange. Other selection options include "I" for immediate changes and "E" for exponential - please refer t

Type of peat	Surface where peat is extracte		
	Start	Without	*
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D

hange. Other selection options include "I" for immediate changes and "E" for exponential - please refer t

pply or navigation, (ii) ditches for agriculture (irrigation, drainage, etc.) ,and (iii) ponds for agriculture and aquaculture

Waterbody type	Tota area of waterbodies (ha)		
	Start	Without	*
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D
Please select	0	0	D

Inland wetlands & Aqua.

Coastal wetlands & Fish/Aqua.

Inputs & investments

Det

If country-specific data

		Deforested area (ha)		Management practices following co	
				Fire	
With	*			Biomass	Soil
0	D	0	0	Y/N	Y/N
0	D	0	0	Y/N	Y/N
0	D	0	0	Y/N	Y/N
0	D	0	0	Y/N	Y/N
0	D	0	0	Y/N	Y/N
0	D	0	0	Y/N	Y/N

to the guidelines for further explanation of these assumptions.

If country-specific data

(ha)	Management practices following co
	Fire

With	*	Residues	Soil
0	D	Y/N	Y/N
0	D	Y/N	Y/N
0	D	Y/N	Y/N
0	D	Y/N	Y/N
0	D	Y/N	Y/N
0	D	Y/N	Y/N

to the guidelines for further explanation of these assumptions.

If country-specific data

(ha)		Management practices following co	
		Fire	
With	*	Residues	Soil
0	D	Y/N	Y/N
0	D	Y/N	Y/N
0	D	Y/N	Y/N
0	D	Y/N	Y/N
0	D	Y/N	Y/N
0	D	Y/N	Y/N

to the guidelines for further explanation of these assumptions.

If country-specific d

With	*	Management practices following conversion: Fire – Biomass	Fire – Soil	Water table level – Start	Water table level – Without
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?

to the guidelines for further explanation of these assumptions.

If country-specific data

With	*	Management practices following conversion: Fire – Residues	Fire – Soil	Water table level – Start	Water table level – Without
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?
0	D	Y/N	Y/N	?	?

to the guidelines for further explanation of these assumptions.

If country-specific data

ed (ha)			% area occupied by ditches		
With	*		Start	Without	With
0	D		0%	0%	0%
0	D		0%	0%	0%
0	D		0%	0%	0%
0	D		0%	0%	0%

to the guidelines for further explanation of these assumptions.

If country-specific data

With	*	Trophic class
0	D	Please select
0	D	Please select
0	D	Please select
0	D	Please select
0	D	Please select
0	D	Please select
0	D	Please select
0	D	Please select

tailed results

a are available, please go to Tier 2: Tier 2 biomass Tier 2 drainage Tier 2 fire

onversion

Water table level			% area occupied by ditches		
Start	Without	With	Start	Without	With
?	?	?			
?	?	?			
?	?	?			
?	?	?			
?	?	?			
?	?	?			

Total deforestation on organic soils (tCO2-e)

a are available, please go to Tier 2: Tier 2 biomass Tier 2 drainage Tier 2 fire

onversion

	Water table level	% area occupied by ditches

	Without	With		Without	With
	?	?			
	?	?			
	?	?			
	?	?			
	?	?			
	?	?			

Total af/reforestation on organic soils (tCO2-e)

a are available, please go to Tier 2: Tier 2 biomass Tier 2 drainage Tier 2 fire

onversion

			% area occupied by ditches		
	Without	With		Without	With
	?	?			
	?	?			
	?	?			
	?	?			
	?	?			
	?	?			

Total other land-use changes on organic soils (tCO2-e) lata are available, please go to Tier 2: Tier 2 biomass Tier 2 drainage Tier 2 fire

	% area occupied by ditches		
With	Start	Without	With
?			
?			
?			
?			
?			
?			

Total forest degradation and managemen

a are available, please go to Tier 2: Tier 2 biomass Tier 2 drainage Tier 2 fire

	% area occupied by ditches		
With	Start	Without	With
?			
?			
?			
?			
?			
?			

Total other land-use managemen

a are available, please go to Tier 2: Tier 2 drainage

Height of extraction (cm)			Quantity of peat produced		
			Tonne per year		
Start	Without	With	Start	Without	With
50	50	50	0	0	0
50	50	50	0	0	0
50	50	50	0	0	0
50	50	50	0	0	0

Total peat extractio

a are available, please go to Tier 2: Tier 2

Fish production (tonne/ha/year)		
Start	Without	With

Total inland waterbodies on mineral so

on soil

Tier 2 rewetting

Total emissions (tCO2-e)

Without	With	Balance
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

on soil

Tier 2 rewetting

Total emissions (tCO2-e)

Without	With		Balance
0	0		0
0	0		0
0	0		0
0	0		0
0	0		0
0	0		0
0	0	0	0

on soil

Tier 2 rewetting

Total emissions (tCO2-e)

Without	With	Balance
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

on soil | Tier 2 rewetting

Total emissions (tCO2-e)

	Without	With	Balance
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
it (tCO2-e)	**0**	**0**	**0**

e on soil | Tier 2 rewetting

Total emissions (tCO2-e)

	Without	With	Balance
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
it (tCO2-e)	**0**	**0**	**0**

	Total emissions (tCO2-e)		
	Without	With	Balance
	0	0	0
	0	0	0
	0	0	0
	0	0	0
n (tCO2-e)	0	0	0

	Total emissions (tCO2-e)		
	Without	With	Balance
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	0	0	0
il (tCO2-e)	0	0	0

[redacted]

6.1 LAND-USE CHANGE ON (

Type of vegetation
that will be deforeste

Please select
Please select
Please select
Please select
Please select
Please select

Use this part only if you want to refin
IPCC default values are provided for y

6.1.2 Organic soil manageme

Final land-use

Please select
Please select
Please select
Please select
Please select
Please select

Use this part only if you want to refin
IPCC default values are provided for y

6.1.3 Organic soil manageme

Initial land-use

Please select
Please select
Please select
Please select
Please select
Please select

Use this part only if you want to refin
IPCC default values are provided for y

6.2.1 Forest management

0= 0%, very low= 10%

Please select
Please select
Please select
Please select
Please select
Please select

Use this part only if you want to refin
IPCC default values are provided for y

ORGANIC SOIL

	Above-ground		Below-ground		Litter	
	tC/ha		tC/ha		tC/ha	
	Default	Tier 2	Default	Tier 2	Default	Tier 2

e the analysis at Tier 2
your information only; EX-ACT will use Tier 2 values automatically wherever specified.

ent practices associated with afforestation / reforestation

Above-ground biomass growth				Below-gr
(≤ 20 years)		(> 20 years)		(≤ 20 y
Default	Tier 2	Default	Tier 2	Default

tC/ha/yr		tC/ha/yr		Default
0.0		0.0		0.0
0.0		0.0		0.0
0.0		0.0		0.0
0.0		0.0		0.0
0.0		0.0		0.0
0.0		0.0		0.0

e the analysis at Tier 2
your information only; EX-ACT will use Tier 2 values automatically wherever specified.

ent practices associated with other land-use changes

Above-ground		Final land-use	Above-ground	
tC/ha			tC/ha	
Default	Tier 2		Default	Tier 2
0.0		Please select	0.0	
0.0		Please select	0.0	
0.0		Please select	0.0	
0.0		Please select	0.0	
0.0		Please select	0.0	
0.0		Please select	0.0	

e the analysis at Tier 2
your information only; EX-ACT will use Tier 2 values automatically wherever specified.

, low= 20%, moderate= 40%, large= 60%, extrem= 80%

Forest degradation level (in % of biomass lost)						Carbo
Start		Without		With		Above-ground	
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
?		?		?		0.0	
?		?		?		0.0	
?		?		?		0.0	
?		?		?		0.0	
?		?		?		0.0	
?		?		?		0.0	

e the analysis at Tier 2
your information only; EX-ACT will use Tier 2 values automatically wherever specified.

Back

Deadwood

tC/ha

Default	Tier 2

ound biomass growth			Litter	
ears)	(> 20 years)			
Tier 2	Default	Tier 2	Default	Tier 2

Default	tC/ha
0.0	0.0
0.0	0.0
0.0	0.0
0.0	0.0
0.0	0.0
0.0	0.0

Back

on pools of non-degraded forest (all values are in tC/ha)

Below-ground		Litter		Dead wood	
Default	Tier 2	Default	Tier 2	Default	Tier 2
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	
0.0		0.0		0.0	

Back

Dead wood

Default Tier 2

Default

0.0
0.0
0.0
0.0
0.0
0.0

Back

Fire occurrence and severity

Without			With	
Periodicity	Impact		Periodicity	Impact
Year	% burnt		Year	% burnt
1	100%		1	100%
1	100%		1	100%
1	100%		1	100%
1	100%		1	100%
1	100%		1	100%
1	100%		1	100%

6.1.1 E

Please indic

Use this pa

IPCC defau

6.1.2 E

Please indic
Use this pa
IPCC defau

6.1.3 E

Please indic
Use this pa
IPCC defau

6.2.1 E

Please indic

Use this pa

IPCC defau

6.2.2 E

Please indic

Use this pa

IPCC defau

6.3 LAN

Use this pa
IPCC defau

6.4 INL

mission factors for drainage associated with deforestation

Final land-use	On-site emission factors			
	CO2		CH4	
	tC/ha/yr		kgCH4/ha/yr	
	Default	Tier 2	Default	Tier 2
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	

cate the dominant quality of peat, this can influence the emission factors above:
art only if you want to refine the analysis at Tier 2
ult values are provided for your information only; EX-ACT will use Tier 2 values automatica

mission factors for drainage associated with afforestation/refo

Final land-use	On-site emission factors	
	CO2	CH4
	tC/ha/yr	kgCH4/ha/yr

	Default	Tier 2	Default	Tier 2
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	

cate the dominant quality of peat, this can influence the emission factors above:
art only if you want to refine the analysis at Tier 2
ılt values are provided for your information only; EX-ACT will use Tier 2 values automatica

mission factors for drainage associated with other land-use ch

Final land-use	On-site emission factors			
	CO2		CH4	
	tC/ha/yr		kgCH4/ha/yr	
	Default	Tier 2	Default	Tier 2
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	

cate the dominant quality of peat, this can influence the emission factors above:
art only if you want to refine the analysis at Tier 2
ılt values are provided for your information only; EX-ACT will use Tier 2 values automatica

Final land-use	On-site emission factors			
	CO2		CH4	
	tC/ha/yr		kgCH4/ha/yr	
	Default	Tier 2	Default	Tier 2
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	
Please select	0.00		0.00	

cate the dominant quality of peat, this can influence the emission factors above:
art only if you want to refine the analysis at Tier 2
ult values are provided for your information only; EX-ACT will use Tier 2 values automatica

mission factors for drainage associated with other land-use m

Land-use cover	On-site emission factors			
	CO2		CH4	
	tC/ha/yr		tC/ha/yr	
	Default	Tier 2	Default	Tier 2
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	

cate the dominant quality of peat, this can influence the emission factors above:
art only if you want to refine the analysis at Tier 2
ult values are provided for your information only; EX-ACT will use Tier 2 values automatica

Type of peat	On-site emission factors			
	CO2		CH4	
	tC/ha/yr		tC/ha/yr	
	Default	Tier 2	Default	Tier 2
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	

art only if you want to refine the analysis at Tier 2
ult values are provided for your information only; EX-ACT will use Tier 2 values automatica

AND WATERBODIES

Waterbody type	CH4 emission factor from waterbodies			
	kgCH4/ha/yr			
	Start		Without	
	Default	Tier 2	Default	Tier 2
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	

Back

		Off-site emission factors			
N2O		DOC		CH4	
kgN2O-N/ha/yr		tC/ha/yr		kgCH4/ha/yr	
Default	Tier 2	Default	Tier 2	Default	Tier 2
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	

Nutrient poor

lly wherever specified.

orestation

Back

	Off-site emission factors	
N2O	DOC	CH4
kgN2O-N/ha/yr	tC/ha/yr	kgCH4/ha/yr

Default	Tier 2	Default	Tier 2	Default	Tier 2
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	

Nutrient poor

lly wherever specified.

anges

Back

		Off-site emission factors			
N2O		DOC		CH4	
kgN2O-N/ha/yr		tC/ha/yr		kgCH4/ha/yr	
Default	Tier 2	Default	Tier 2	Default	Tier 2
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	

Nutrient poor

lly wherever specified.

Back

Off-site emission factors						
N2O		DOC		CH4	
kgN2O-N/ha/yr		tC/ha/yr		kgCH4/ha/yr	
Default	Tier 2	Default	Tier 2	0	Default
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	
0.00		0.00		0.00	

Nutrient poor

lly wherever specified.

anagement

Back

Off-site emission factors					
N2O		DOC		CH4	
tC/ha/yr		tC/ha/yr			tC/ha/yr
Default	Tier 2	Default	Tier 2		Default
0.0		0.0		0.00	
0.0		0.0		0.00	
0.0		0.0		0.00	
0.0		0.0		0.00	
0.0		0.0		0.00	
0.0		0.0		0.00	

Nutrient poor

lly wherever specified.

		Off-site emission factors				CO2 emiss
N2O		DOC		CH4		Peat densi
tC/ha/yr		tC/ha/yr			tC/ha/yr	t/m3
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default
0.0		0.00		0.00		0.000
0.0		0.00		0.00		0.000
0.0		0.00		0.00		0.000
0.0		0.00		0		0.000

*If ye

lly wherever specified.

Back

		Trophic state		
				Mean annual [Chlo.a]
With		α		[μg/L]
Default	Tier 2	Default	Tier 2	
0.0		0.0		
0.0		0.0		
0.0		0.0		
0.0		0.0		
0.0		0.0		
0.0		0.0		
0.0		0.0		
0.0		0.0		

6.1.1 Emissions factors for fire on organic soils associated w

Final land-use	Deforested area (ha)	
	Without	With
Please select	0	0
Please select	0	0
Please select	0	0
Please select	0	0
Please select	0	0
Please select	0	0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values

6.1.2 Emissions factors for fire on organic soils associated w

Final land-use	Converted areas	
	Without	With

Please select	0	0
Please select	0	0
Please select	0	0
Please select	0	0
Please select	0	0
Please select	0	0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values

6.1.3 Emissions factors for fire on organic soils associated w

Final land-use	Converted areas (ha)	
	Without	With
Please select	0	0
Please select	0	0
Please select	0	0
Please select	0	0
Please select	0	0
Please select	0	0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values

6.2.1 Emissions factors for fire on organic soils associated w

Final land-use	Area (ha)
Please select	0
Please select	0
Please select	0
Please select	0
Please select	0
Please select	0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values

6.2.2 Emissions factors for fire on organic soils associated w

Land-use cover	Area (ha)		
	Start	Without	With
Please select	0	0	0
Please select	0	0	0
Please select	0	0	0
Please select	0	0	0
Please select	0	0	0
Please select	0	0	0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values

Back

sion from peat use

ty

Use for energy?*

Tier 2

	Please select
	Please select
	Please select
	Please select

es it is automatically accounted fro in the Inputs module

ith deforestation

Fire occurrence and severity

Type of fire	Without		With	
	Periodicity	Impact	Periodicity	Impact
	Year	% burnt	Year	% burnt
Please select	1	100%	1	50%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%

automatically wherever specified.

ith afforestation/reforestation

Fire occurrence and severity

Type of fire	Without		With	
	Periodicity	Impact	Periodicity	Impact

	Year	% burnt	Year	% burnt
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%

automatically wherever specified.

ith other land-use change

Fire occurrence and severity

	Without		With	
Type of fire	Periodicity	Impact	Periodicity	Impact
	Year	% burnt	Year	% burnt
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%

automatically wherever specified.

Fire occurrence and severity

	Without		With	
Type of fire	Periodicity	Impact	Periodicity	Impact
	Year	% burnt	Year	% burnt
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%

automatically wherever specified.

ith other land-use management

Fire occurrence and severity

	Without		With	
Type of fire	Periodicity	Impact	Periodicity	Impact
	Year	% burnt	Year	% burnt
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%
Please select	1	100%	1	100%

automatically wherever specified.

Back

Emission factors fire

CO2		CO		CH4		Mean dry matter	
gC/kg d.m.		gCO/kg d.m.		gCH4/kg d.m.		t dm/ha	
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	

Back

Emission factors fire

CO2	CO	CH4	Mean dry matter
gC/kg d.m.	gCO/kg d.m.	gCH4/kg d.m.	t dm/ha

Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	

Back

Emission factors fire

CO2		CO		CH4		Mean dry matter	
gC/kg d.m.		gCO/kg d.m.		gCH4/kg d.m.		t dm/ha	
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	

Back

Emission factors fire

CO2		CO		CH4		Mean dry matter	
gC/kg d.m.		gCO/kg d.m.		gCH4/kg d.m.		t dm/ha	
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	

Back

Emission factors fire

CO2		CO		CH4		Mean dry matter	
gC/kg d.m.		gCO/kg d.m.		gCH4/kg d.m.		t dm/ha	
Default	Tier 2	Default	Tier 2	Default	Tier 2	Default	Tier 2
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	
464		210		21		0	

6.1.1. Rewetting associated with defores

Type of vegetation	On site em CO2 on sit tC/ha/yr
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; I

6.1.2. Rewetting associated with afforest

Final land-use	On site em CO2 on sit

	tC/ha/yr
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; I

6.1.3 Rewetting associated with other lar

Final land-use	On site em
	CO2 on sit
	tC/ha/yr
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; I

6.2.1 Rewetting associated with forest m

Final land-use	On site em
	CO2 on sit
	tC/ha/yr
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only;

6.2.2 Rewetting associated with other lar

Land-use cover	On site em
	CO2 on sit
	tC/ha/yr
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0
Please select	0.0

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only;

Back

issions factor						Off-site emission factor
	CH4 on-site		N2O			DOC off-site
	kg CH4-C/ha/yr		kg N2O-N/ha/yr			tC/ha/yr
	0		0			0.00
	0		0			0.00
	0		0			0.00
	0		0			0.00
	0		0			0.00
	0		0			0.00

Nutrient poor soil

EX-ACT will use Tier 2 values automatically wherever specified.

ation/reforestation

Back

issions factor						Off-site emission factor
	CH4 on-site		N2O			DOC off-site

	kg CH4-C/ha/yr		kg N2O-N/ha/yr		tC/ha/yr	
	0		0		0.00	
	0		0		0.00	
	0		0		0.00	
	0		0		0.00	
	0		0		0.00	
	0		0		0.00	

Nutrient poor soil

EX-ACT will use Tier 2 values automatically wherever specified.

nd-use change

Back

nissions factor					Off-site emission factor	
	CH4 on-site		N2O		DOC off-site	
	kg CH4-C/ha/yr		kg N2O-N/ha/yr		tC/ha/yr	
	0		0		0.00	
	0		0		0.00	
	0		0		0.00	
	0		0		0.00	
	0		0		0.00	
	0		0		0.00	

Nutrient poor soil

EX-ACT will use Tier 2 values automatically wherever specified.

Back

issions factor		Off-site emission factor
CH4 on-site	N2O	DOC off-site
kg CH4-C/ha/yr	kg N2O-N/ha/yr	tC/ha/yr
0	0	0.00
0	0	0.00
0	0	0.00
0	0	0.00
0	0	0.00
0	0	0.00

Nutrient poor soil

EX-ACT will use Tier 2 values automatically wherever specified.

nd-use management

Back

issions factor		Off-site emission factor
CH4 on-site	N2O	DOC off-site
kg CH4-C/ha/yr	kg N2O-N/ha/yr	tC/ha/yr
0	0	0.00
0	0	0.00
0	0	0.00
0	0	0.00
0	0	0.00
0	0	0.00

Nutrient poor soil

EX-ACT will use Tier 2 values automatically wherever specified.

EX-ACT Version 9
Start

Description of project

Land-use
changes

Fisheries

Aqua.

7.1 MANAGEMENT OF COASTAL WETLANDS (mangrove

7.1.1. Extraction and excavation (port construction, construction

Type of vegetation	Area (ha)	% excavated
	Start	Without
Please select	0	0%
Please select	0	0%
Please select	0	0%
Please select	0	0%
Please select	0	0%
Please select	0	0%

*The selection of "D" corresponds to a default (linear) dynamics of change. Other selection

7.1.2 Drainage

Please specify area in the "Extraction and Excavation" module above.

Type of vegetation	% drained		
	Start	Without	*
Please select	0%	0%	D
Please select	0%	0%	D
Please select	0%	0%	D
Please select	0%	0%	D
Please select	0%	0%	D
Please select	0%	0%	D

*The selection of "D" corresponds to a default (linear) dynamics of change. Other selection

7.1.3 Rewetting & revegetation

Type of vegetation	Area rewetted	
	Without	*
Please select	0	D
Please select	0	D
Please select	0	D
Please select	0	D
Please select	0	D
Please select	0	D

*The selection of "D" corresponds to a default (linear) dynamics of change. Other selection

Coastal Wet.

Aqua.

7.2. Coastal and marine fisheries management

Inputs & Investments module can be used to complement this section

Fishing operations (based on fuel use intensity, FUI, values)

Fish category	Gear Category	% with refrige
		Start
Please select	Please select	0%
Please select	Please select	0%
Please select	Please select	0%
Please select	Please select	0%
Please select	Please select	0%
Please select	Please select	0%

On-board leakage from refrigeration systems

Total catch with refrigerant systems (fishes, etc.)

Emissions from production of ice produced inshore

	% of Total cat
	Start
Total artisanal and coastal catch	

*The selection of "D" corresponds to a default (linear) dynamics of change. Other selection

Coastal Wet.

7.3. Coastal wetland-based aquaculture

Inputs & Investments module can be used to complement this section

CH4 and N2O emissions from ponds

Waterbody type	Trophic class
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select
Please select	Please select

Emissions from feeds

User note	Waterbody type
	Please select
	Please select
	Please select
	Please select
	Please select
	Please select

*The selection of "D" corresponds to a default (linear) dynamics of change. Other

Cropland management

Grassland & Livestock

Forest management

es, tidal marsh and seagrass meadow)

of aquaculture or salt production)

	Area excavated (ha)		Maximum area available for drain	
With	Without	With	Start	Without
0%	0	0	0	0
0%	0	0	0	0
0%	0	0	0	0
0%	0	0	0	0
0%	0	0	0	0
0%	0	0	0	0

options include "I" for immediate changes and "E" for exponential - please refer to the guidelines for further

		Area drained (ha)		
With	*	Start	Without	With
0%	D	0	0	0
0%	D	0	0	0
0%	D	0	0	0
0%	D	0	0	0
0%	D	0	0	0
0%	D	0	0	0

options include "I" for immediate changes and "E" for exponential - please refer to the guidelines for further

l (ha)		Percentage of nominal biomass restored	
With	*	Without	With
0	D	0%	0%
0	D	0%	0%
0	D	0%	0%
0	D	0%	0%
0	D	0%	0%
0	D	0%	0%

options include "I" for immediate changes and "E" for exponential - please refer to the guidelines for further

rant systems		FUI management	
Without	With	Without	With
0%	0%	0%	0%
0%	0%	0%	0%
0%	0%	0%	0%
0%	0%	0%	0%
0%	0%	0%	0%
0%	0%	0%	0%

100% = Nominal FUI (see tier 2)

ch preserved by ice produced inshore

Without	With

options include "I" for immediate changes and "E" for exponential - please refer to the guidelines for further

Tota area of waterbodies (ha)

Start	Without	*	With	*
0	0	D	0	D
0	0	D	0	D
0	0	D	0	D
0	0	D	0	D
0	0	D	0	D
0	0	D	0	D

selection options include "I" for immediate changes and "E" for exponential - please refer to the gu

Inland wetlands & Aqua.

Coastal wetlands & Fish/Aqua.

Inputs & investments

De

If country-specific data are available, please

ɪage		Total emissions (tCO2-e
With		Without
0		0
0		0
0		0
0		0
0		0
0		0
	Total for extraction and excavation (tCO2-e)	0

explanation of these assumptions.

Total emissions (tCO2-e
Without
0
0
0
0
0
0

Total for drainage (tCO2-e)	0

explanation of these assumptions.

	Total emissions (tCO2-e
	Without
	0
	0
	0
	0
	0
	0
Total for rewetting & revegetation (tCO2-e)	0

explanation of these assumptions.

If country-specific data are available, please

Total catch per year (tonne/year)					Total emissions (tCO2-e
Start	Without	*	With	*	Without
		D		D	0
		D		D	0
		D		D	0
		D		D	0
		D		D	0
		D		D	0
Start	Without		With		Without

0	0	0		0
Start	Without	With		Without
0	0	0		0

Total for coastal and marine fisheries (tCO2-e)	0

explanation of these assumptions.

If country-specific data are available, please

Annual production (tonne/year)					Total emissions (tCO2-e
Start	Without	*	With	*	Without
0	0	D	0	D	0
0	0	D	0	D	0
0	0	D	0	D	0
0	0	D	0	D	0
0	0	D	0	D	0
0	0	D	0	D	0

Annual quantity of feeds (tonne/year)					
Start	Without	*	With	*	Without
0	0	D	0	D	0
0	0	D	0	D	0
0	0	D	0	D	0
0	0	D	0	D	0
0	0	D	0	D	0
0	0	D	0	D	0

Total for coastal-based aquaculture (tCO_2-e)	0

uidelines for further explanation of these assumptions.

tailed results

go to Tier 2: Tier 2

e)		Balance
	With	
	0	0
	0	0
	0	0
	0	0
	0	0
	0	0
	0	0

e)		Balance
	With	
	0	0
	0	0
	0	0
	0	0
	0	0
	0	0

0	0

e)	Balance
With	
0	0
0	0
0	0
0	0
0	0
0	0
0	0

go to Tier 2: Tier 2

e)	Balance
With	
0	0
0	0
0	0
0	0
0	0
0	0
With	

0	0
With	
0	0
0	0

go to Tier 2: Tier 2

e)	Balance
With	
0	0
0	0
0	0
0	0
0	0
0	0
With	
0	0
0	0
0	0
0	0
0	0
0	0

0	0

[redacted]

[redacted]

[redacted]

7.1 MANAGEMENT OF COASTAL WETLANDS (mangroves, tida

7.1.1. Extraction and excavation (port construction, construction of aqu

All values are in tC/ha

Type of vegetation	Above-ground		Below-ground	
	Default	Tier 2	Default	Tier 2
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values au

7.1.2 Drainage

All values are in tC/ha

Type of vegetation	Above-ground		Below-ground	
	Default	Tier 2	Default	Tier 2
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values au

7.1.3 Rewetting & revegetation

	All values are in tC/ha			
Type of vegetation	Above-ground		Below-ground	
	Default	Tier 2	Default	Tier 2
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	
Please select	0.0		0.0	

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values au

7.2. Coastal and marine fisheries management

		Fuel use intensity - FUI (litre/t ca		
Fish category	Gear Category	Unit	Default	
Please select	Please select	l/tonne	0	Gear speci
Please select	Please select	l/tonne	0	Gear speci
Please select	Please select	l/tonne	0	Gear speci
Please select	Please select	l/tonne	0	Gear speci
Please select	Please select	l/tonne	0	Gear speci
Please select	Please select	l/tonne	0	Gear speci

On-board leakage from refrigeration systems

	Quantity lost (kg refrigerant)	
	Default	Tier 2
Refrigerant lost per tonne of landed catch	0.023	

Emissions from production of ice produced ashore

	Quantity (tonne)	
	Default	Tier 2
Quantity of ice (tonne) per tonne of catch	2.8	

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values au

7.3. Coastal wetland-based aquaculture

		CH4 emission factor from waterbodies kgCH4/ha/yr			
		Start		Without	
Waterbody type	Trophic state	Default	Tier 2	Default	Tier 2
Please select	Please select	0.0		0.0	
Please select	Please select	0.0		0.0	
Please select	Please select	0.0		0.0	
Please select	Please select	0.0		0.0	
Please select	Please select	0.0		0.0	
Please select	Please select	0.0		0.0	

Waterbody type
Please select
Please select
Please select
Please select
Please select
Please select

Use this part only if you want to refine the analysis at Tier 2
IPCC default values are provided for your information only; EX-ACT will use Tier 2 values au

al marsh and seagrass meadow)

aculture or salt production)

Litter		Deadwood		Type of soil	Soil (1 m depth)		
Default	Tier 2	Default	Tier 2		Tier	Default	Tier 2
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	

ıtomatically wherever specified.

Litter		Deadwood		Type of soil	Soil (1 m depth)		
Default	Tier 2	Default	Tier 2		Tier	Default	Tier 2
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	
0.0		0.0		Mineral	IPCC	0	

ıtomatically wherever specified.

Litter		Deadwood		Average salinity	EF CO2 (tC/ha/yr)	
Default	Tier 2	Default	Tier 2		Default	Tier 2
0.0		0.0		<18	0.00	
0.0		0.0		<18	0.00	
0.0		0.0		<18	0.00	
0.0		0.0		<18	0.00	
0.0		0.0		<18	0.00	
0.0		0.0		<18	0.00	

ıtomatically wherever specified.

Emission factor (tCO2-e/m3)	
Gasoil/Diesel	2.60

ıtch)

	Tier 2				Emission factor (tCO2eq/t catch)	
	Start	Without	With		Start	Without
ific					0.00	0.00
ific					0.00	0.00
ific					0.00	0.00
ific					0.00	0.00
ific					0.00	0.00
ific					0.00	0.00
				Total fuel consumption (m3/year)	0	0

GWP of refrigerant		Emission factor
Default	Tier 2	tCO2-e/t catch
1780		0.4

	Quantity (kWh/t ice)		E
	Default	Tier 2	t
Electricity (kWh) used per tonne of ice	60		
Country of origin of ice production	Please select		

utomatically wherever specified.

		Trophic state		
				Annual mean [Chlo.a]
With		α		[µg/L]
Default	Tier 2	Default	Tier 2	
0.0		0.0		
0.0		0.0		
0.0		0.0		
0.0		0.0		
0.0		0.0		
0.0		0.0		

(tCO2-e/t feed)	
Default	Tier 2
0	
0	
0	
0	
0	
0	

Back

% C lost after excavation

Default	Tier 2
96%	
96%	
96%	
96%	
96%	
96%	

EF drainage (tC/ha/yr)

Default	Tier 2
0.0	
0.0	
0.0	
0.0	
0.0	
0.0	

EF CH4 (kgCH4/ha/yr)	
Default	Tier 2
0.0	
0.0	
0.0	
0.0	
0.0	
0.0	

Back

With
0.00
0.00
0.00
0.00
0.00
0.00
0

mission factor
CO2-e/t catch
0.17

Back

N2O EF from fish production
(t N2O-N/t production)

Default	Tier 2
0.00169	
0.00169	
0.00169	
0.00169	
0.00169	
0.00169	

8.1 INPUTS (liming, fertilizers, pesticides)

Fertilizers

	Amount appl
	Start
Lime application	
Limestone (tonnes per year)	0
Dolomite (tonne per year)	0
Not-specified (tonnes per year)	0
Synthetic fertilizers	
Urea (tonnes of Urea per year)	0
Synthetic N-fertilizers other than Urea (tonnes of N per year)	0
Phosphorus (tonnes of P2O5 per year)	0
Potassium (tonnes of K2O per year)	0
N-fertilizers on irrigated rice	
N-fertilizer in continously irrigated rice (tonnes of N per year)	0
N-fertilizer in wet and dry irrigated rice (tonnes of N per year)	0
Organic N-fertilizers	
Sewage	0
Compost	0
Rendering waste, brewery waste, guano	0

Pesticides

Fungicides	0
Herbicides	0
Insecticides	0

Inputs Irrigation Infrastructure

8.2. ENERGY CONSUMPTION (electricity, fuel...) except f

Description and unit to report

	Quantity con
Electricity (MWh per year)	Start
Country of origin of electricity	
Please select	0
User defined (Tier 2)	0
Liquid or gaseous (in m3 per year)	
Please select	0
Mobile - Gasoil /Diesel Oil	0
Please select	0
Please select	0
User defined (Tier 2)	0
Solid (in tonnes of dry matter per year)	
Wood	0
Peat	0
Charcoal	0
Peat (from peatlands)	0

Inputs Energy Infrastructure

8.3 IRRIGATION

Description and unit to report

Implementation of new irrigation systems

Irrigation systems

Surface with IRRS
Please select
Please select
Please select

Operational phase of groundwater irrigated systems

Su

Irrigation systems	Start
Please select	0
Please select	0
Please select	0
Please select	0

Inputs

Energy

8.4 BUILDINGS & ROADS

Description and unit to report

Buildings and roads (in m2)

Please select
Road (asphalt)
Please select
Please select

pland management | Grassland & Livestock | Forest management | Inland wetlands &

ied per year (in tonne)				Total emissions at field level (tCO2-e)		
				CO2 emissions		N2O em
Without		With		Without	With	Without
	*		*			
0	D	0	D	0	0	-
0	D	0	D	0	0	-
0	D	0	D	0	0	-
0	D	0	D	0	0	0
3,000	D	1,800	D	-	-	122,925
3,000	D	1,800	D	-	-	-
3,000	D	1,800	D	-	-	-
0	D	0	D	-	-	0
0	D	0	D	-	-	0
0	D	0	D	-	-	0
0	D	0	D	-	-	0
0	D	0	D	-	-	0
0	D	0	D	-	-	-
0	D	0	D	-	-	-
0	D	0	D	-	-	-

or irrigation, i.e. see next section

sumed per year

Without	*	With	*
0	D		D
0	D	0	D
0	D	0	D
0	D	26	D
0	D	0	D
0	D	0	D
0	D	0	D
0	D	0	D
0	D	0	D
0	D	0	D
0	D	0	D

Surfaces (in ha)

Without	With
0	3,000
0	0
0	0
0	0

rfaces (in ha)

Without	*	With	*	Source of energy Pump
0	D	0	D	Please select
0	D	0	D	Please select
0	D	0	D	Please select
0	D	0	D	Please select

Country of origin of electricity Please select

Surfaces (in m2)

Without	With

0	
0	192,000
0	0
0	0

& Aqua. | Coastal wetlands &Fish/Aqua. | Inputs & investments | Detailed results

If country-specific data a

issions	Emissions from production, transportation, storage and transfer (tCO2-e)		
With	Without	With	
-	0	0	
-	0	0	
-	0	0	
0	0	0	Manufactured in the country
73,755	250,250	150,150	
-	38,500	23,100	
-	28,875	17,325	
0	0	0	
0	0	0	
0	-	-	
0	-	-	
0	-	-	
-	0	0	
-	0	0	
-	0	0	

Total inputs (tCO2-e)

If country-specific data a
Manufactured in the country
Total energy (tCO2-e)

If country-specific data a

Manufactured in the country

Over the main crop season	
Gross Irrigation Water Requirement (in mm/year)	Depth H2O (in m)

Total irrigation (tCO2-e)

If country-specific data a

	Total buildings and roads (tCO2-e)

are available, please go to Tier 2: Tier 2

Total emissions (tCO2-e)

Without	With	Balance
0	0	0
0	0	0
0	0	0
0	0	0
373,175	223,905	-149,270 ▼
38,500	23,100	-15,400 ▼
28,875	17,325	-11,550 ▼
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0

440,550	264,330	-176,220 ▼

are available, please go to Tier 2: Tier 2

Total emissions (tCO2-e)		Balance
Without	With	
0	0	0
0	0	0
0	0	0
0	1,248	1,248 ▲
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	1,248	1,248 ▲

are available, please go to Tier 2: Tier 2

Total emissions (tCO2-e)		Balance
Without	With	
0	271	271 ▲
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	271	271 ▲

are available, please go to Tier 2:

Tier 2

Total emissions (tCO2-e)		Balance
Without	With	

0	0	0
0	14,080	14,080 ▲
0	0	0
0	0	0
0	14,080	14,080 ▲

[redacted]

8.1 INPUTS (liming, fertilizers, pesticides)

Emissions factors

Fertilizers

	CO2 emissions	
	Unit	Default
Limestone (tonnes per year)	tC/t lime	0.120
Dolomite (tonne per year)	tC/t lime	0.130
Not-specified (tonnes per year)	tC/t lime	0.125
Urea (tonnes of Urea per year)	tC/t Urea	0.200
Synthetic N-fertilizers other than Urea (tonnes of N per year)		
Phosphorus (tonnes of P2O5 per year)		
Potassium (tonnes of K2O per year)		
N-fertilizer in continously irrigated rice (tonnes of N per year)		
N-fertilizer in wet and dry irrigated rice (tonnes of N per year)		
Sewage		
Compost		
Rendering waste, brewery waste, guano		
Fungicides		
Herbicides		
Insecticides		

Urea CO2 removal

By default EX

8.2. ENERGY CONSUMPTION (electricity, fuel…) except fo

Description and unit to report

Electricity		
Emission factor for the selected country		tC
Losses of electricity during transportation		
User defined (Tier 2)		tC
Losses of electricity during transportation		
Liquid or gaseous		
Please select		
Mobile - Gasoil /Diesel Oil		
Please select		
Please select		
User defined (Tier 2)		
Solid		
Wood		tCO2
Peat		tCO
Charcoal		tCO2-e
Peat (from peatlands)		tCO

8.3 IRRIGATION

Description and unit to report

Implementation of new irrigation systems

Irrigation systems	
Surface with IRRS	k
Please select	k
Please select	k
Please select	k

Operational phase of groundwater irrigated systems

Irrigation systems	Source of energy	
Please select	Please select	t
Please select	Please select	t
Please select	Please select	t
Please select	Please select	t

Losses of electricity (

8.4 BUILDINGS & ROADS

Description and unit to report

Buildings and roads (in m2)	Unit	Default

Please select	tCO2/m2	0.000
Road (asphalt)	tCO2/m2	0.073
Please select	tCO2/m2	0.000
Please select	tCO2/m2	0.000

Emissions at field level

Emissions from product

	N2O emissions		
Tier 2	Unit	Default	Tier 2
	kg N-N2O/kg N	0.005	
	kg N-N2O/kg N	0.005	
	kg N-N2O/kg N	0.003	
	kg N-N2O/kg N	0.005	
	kg N-N2O/kg N	0.005	
	kg N-N2O/kg N	0.005	
	kg N-N2O/kg N	0.005	

CO2-e emissions	
Unit	Default
tCO2/t lime	0.587
tCO2/t lime	0.587
tCO2/t lime	0.587
tCO2/t N	4.767
tCO2/t N	4.767
tCO2/t P2O5	0.733
tCO2/t K2O	0.550
tCO2/t N	4.767
tCO2/t N	4.767
tCO2-e/t active ingredient	14.3
tCO2-e/t active ingredient	23.1
tCO2-e/t active ingredient	18.7

l from the atmosphere during urea manufacturing is estimated in the Industrial Processes and Product Use Sector by the cou

-ACT considers that urea is imported and do not account for this sink, but you can force the calculation to do so:

or irrigation, i.e. see next section

Unit	Default	Tier 2		
CO2/MWh/yr	0.000			
%	10%			
CO2/MWh/yr				
%	10%			
tCO2-e/m3	0.000			
tCO2-e/m3	2.714			
tCO2-e/m3	0.000			
tCO2-e/m3	0.000			
tCO2-e/m3				
2-e/t d.m. Wood	0.178		Account for CO2 emissions?	No
2-e/t d.m. Peat	0.104		Account for CO2 emissions?	No
e/t d.m. Charcoal	0.209		Account for CO2 emissions?	No
2-e/t d.m. Peat	0.104			

Unit	Default	Tier 2
:g CO2-e/ha	90.20	
:g CO2-e/ha	0.00	
:g CO2-e/ha	0.00	
:g CO2-e/ha	0.00	

Pump Character

Emission factors source of energy

Unit	Default	Tier 2
CO2-eq/m3	0.000	
CO2-eq/m3	0.000	
CO2-eq/m3	0.000	
CO2-eq/m3	0.000	
during transportation	10%	

Average pressure (in bar)

Default	Tier 2
0.00	
0.00	
0.00	
0.00	

Back

Tier 2

Back

ion, transportation, storage and transfer

Tier 2

untry where urea was produced.

Account the manufacturing sink? NO

Back

Back

ristics

Total dynamic head (in meters head)		Pumping efficiency (in %)	
Default	Tier 2	Default	Tier 2
0.0		45%	
0.0		45%	
0.0		45%	
0.0		45%	

[redacted]

[redacted]

EX-ACT Version 9 Start | Description of project | Land-use changes | m

Summary GHG

ADDITIONAL FINANCING - YEMEN FOOD SECURIT

Continent	Western Asia
Country	Yemen
Climate	Tropical
Moisture	Dry

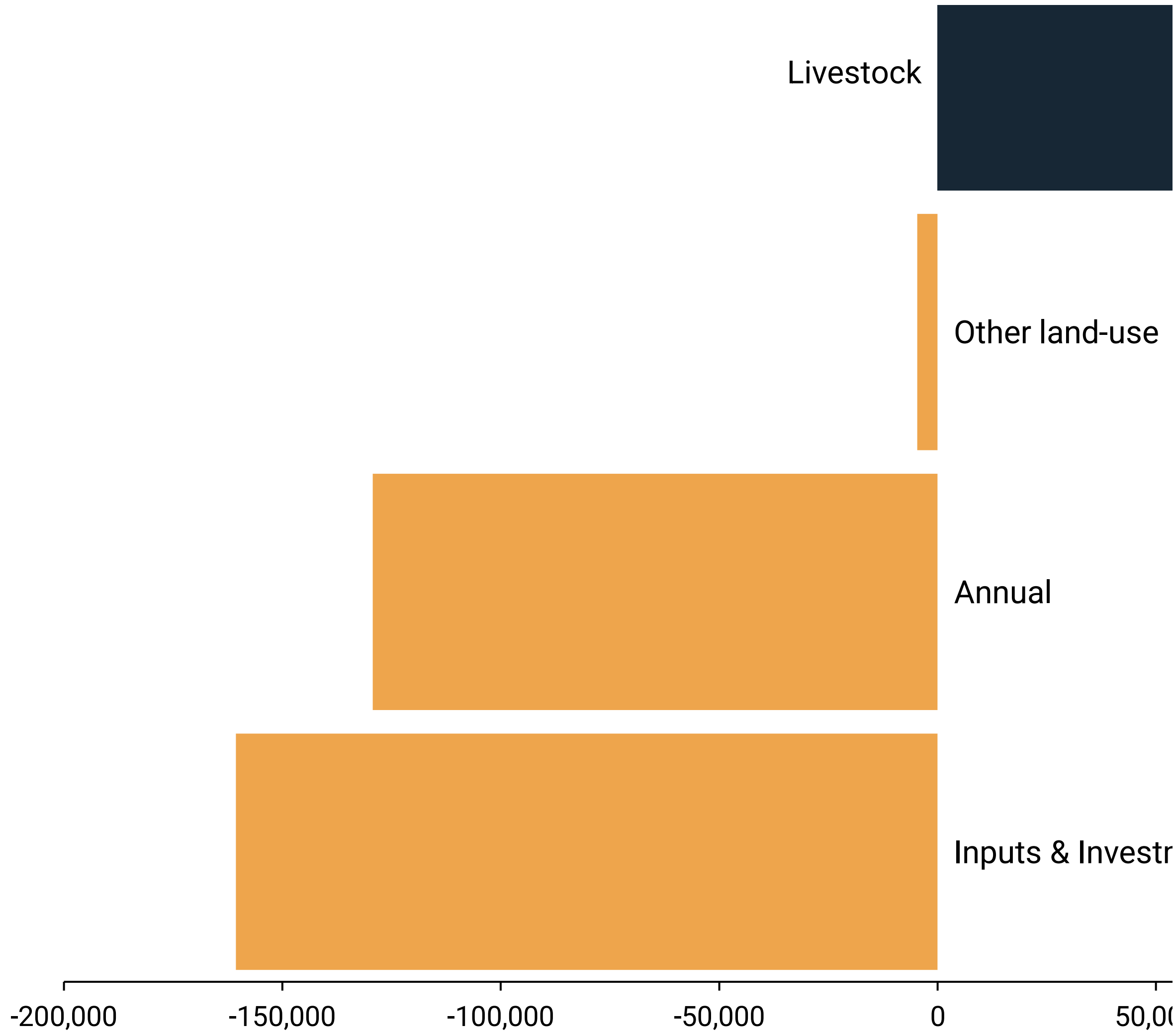
Total areas (ha)	40,075

Project duration (in years)

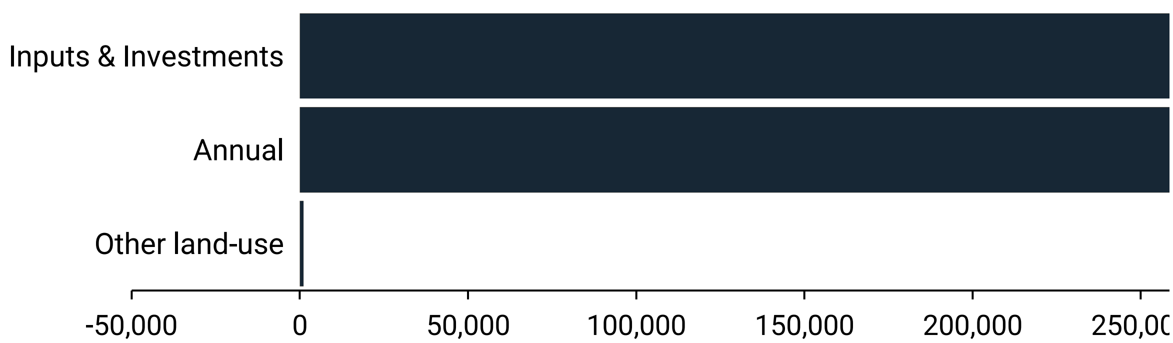
Implementation	5
Capitalization	15
Period analysis	20

Results presented here include GHG fluxes on mineral and organic soils
See further down for detailed results on organic soils

Carbon-balance,



Gross Fluxes Without P



Project name	ADDITIONAL FINANCING - YEMEN FOOD SECURITY RE
Continent	Western Asia
Country	Yemen
Climate	Tropical
Moisture	Dry

GROSS FLUXES

In tCO_2-e over the whole period analysis

PROJECT COMPONENTS		WITHOUT	WITH
Land use changes	Deforestation	0	0
	Afforestation	0	0
	Other land-use	1,059	-3,633
Cropland	Annual	333,658	204,333
	Perennial	0	0
	Flooded rice	0	0
Grasslands & Livestock	Grasslands	0	0
	Livestock	0	203,788
	Forest mngt.	0	0
	Inland wetlands	0	0
	Coastal wetlands	0	0
	Inputs & Invest.	440,550	279,929
Total emissions, tCO_2-e		**775,267**	**684,416**
Total emissions, tCO_2-e/ha		**19.3**	**17.1**
Total emissions, tCO_2-e/ha/yr		**1.0**	**0.9**

+ = Source / - = Sink

Results presented here include GHG fluxes on mineral and organic soils

See further down for detailed results on organic soils

DETA

WITHOUT PROJECT	Forest	Annual
Forest	0	0
Annual cropland and fallow	0	37,760
Agroforestry	0	0

Flooded rice	0	0
Grassland	0	0
Degraded land	0	0
Other land (non-vegetated)	0	0
Total area without project (ha)	0	37,760

WITH PROJECT	Forest	Annual
Forest	0	0
Annual cropland and fallow	0	37,760
Agroforestry	0	0
Flooded rice	0	0
Grassland	0	315
Degraded land	0	0
Other land (non-vegetated)	0	315
Total area with project (ha)	0	38,390

GROSS FLUXES

In tCO_2-e over the whole period analysis

PROJECT COMPONENTS	WITHOUT	WITH
Deforestation	0	0
Forest degradation	0	0

Af/reforestation	0	0
Non-forest land-use change	0	0
Non-forest land management	0	0
Peat extraction	0	0
Total emissions, tCO_2-e	**0**	**0**
Total emissions, tCO_2-e/ha	**0.0**	**0.0**
Total emissions, tCO_2-e/ha/yr	**0.0**	**0.0**

Share of the balance pe

FIRE

CH4 SOIL

N2O SOIL

CO2 SOIL

CO2 BIOMASS

0 0 0 1 1

Gross Fluxes Without P

Biomass management

Fire

Rewetting

Drainage

DETA

WITHOUT PROJECT	Forest	Annual
Forest land	0	0
Annual	0	0
Agroforestry	0	0
Flooded rice	0	0
Grassland	0	0
Degraded	0	0
Other land (non-vegetated)	0	0
Total area without project (ha)	0	0

WITH PROJECT	Forest	Annual
Forest land	0	0
Annual	0	0
Agroforestry	0	0
Flooded rice	0	0
Grassland	0	0
Degraded	0	0
Other land (non-vegetated)	0	0
Total area with project (ha)	0	0

Cropland
anagement

Grassland &
Livestock

Forest
management

Inland wetlands &
Aqua.

analysis

MITIGATION POTENTIAL

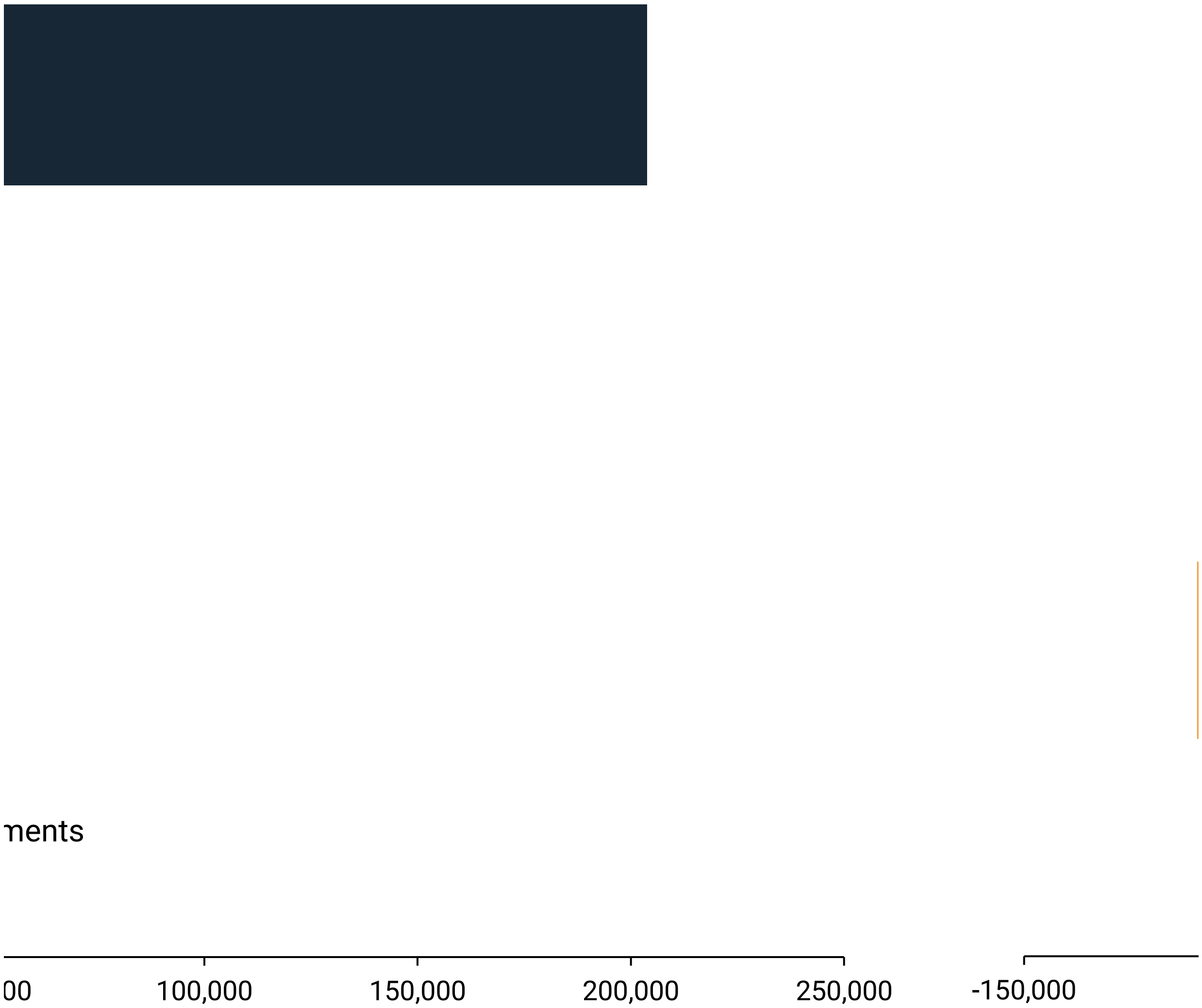
-90,850

tCO_2-e

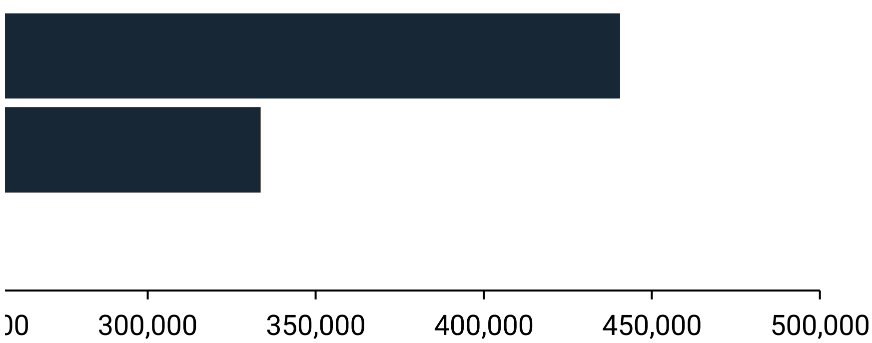
+ = Source / - = Sink

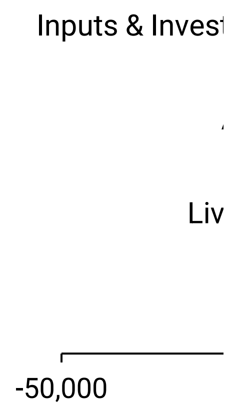
-200,000

in tCO_2-e



Project, in tCO_2-e





DETAILED RESUL

ESPONSE AND RESILIENCE PROJECT

Project duration (in years)	
Implementation	5
Capitalization	15
Period analysis	20

Total area (ha)
Mineral soil
Organic soil
Waterbodies

SHARE PER GHG OF THE BALANCE

In tCO_2-e over the whole period analysis

BALANCE	CO_2 BIOMASS	CO_2 SOIL	N_2O
0	0	0	0
0	0	0	0
-4,692	-15,108	10,409	8
-129,325	0	-123,669	-5,656
0	0	0	0
0	0	0	0
0	0	0	0
203,788			17,219
0	0	0	0
0	0	0	0
0	0	0	0
-160,621		0	-49,170
-90,850	**-15,108**	**-113,260**	**-37,600**
-2.3	**-0.4**	**-2.8**	**-0.9**
-0.1	**0.0**	**-0.1**	**0.0**

AILED MATRIX OF CHANGES I

Perennial	Flooded rice	Grassland	Degraded land
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0
0	0	315	0
0	0	0	0
2,000	0	0	0
2,000	0	315	0

Perennial	Flooded rice	Grassland	Degraded land
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

DETAILED RESULTS ORG

SHARE PER GHG OF THE BALANCE

In tCO_2-e over the whole period analysis

BALANCE	CO_2 BIOMASS	CO_2 SOIL	N_2O SOIL
0	0	0	0
0	0	0	0

0	0	0	0
0	0	0	0
0	0	0	0
0		0	0
0	**0**	**0**	**0**
0.0	**0.0**	**0.0**	**0.0**
0.0	**0.0**	**0.0**	**0.0**

er GHG, in tCO_2-e

BALANCE

WITH

WITHOUT

1 1 1 2 0

roject, in tCO_2-e

Biomass n

Fire

Rewetting

Drainage

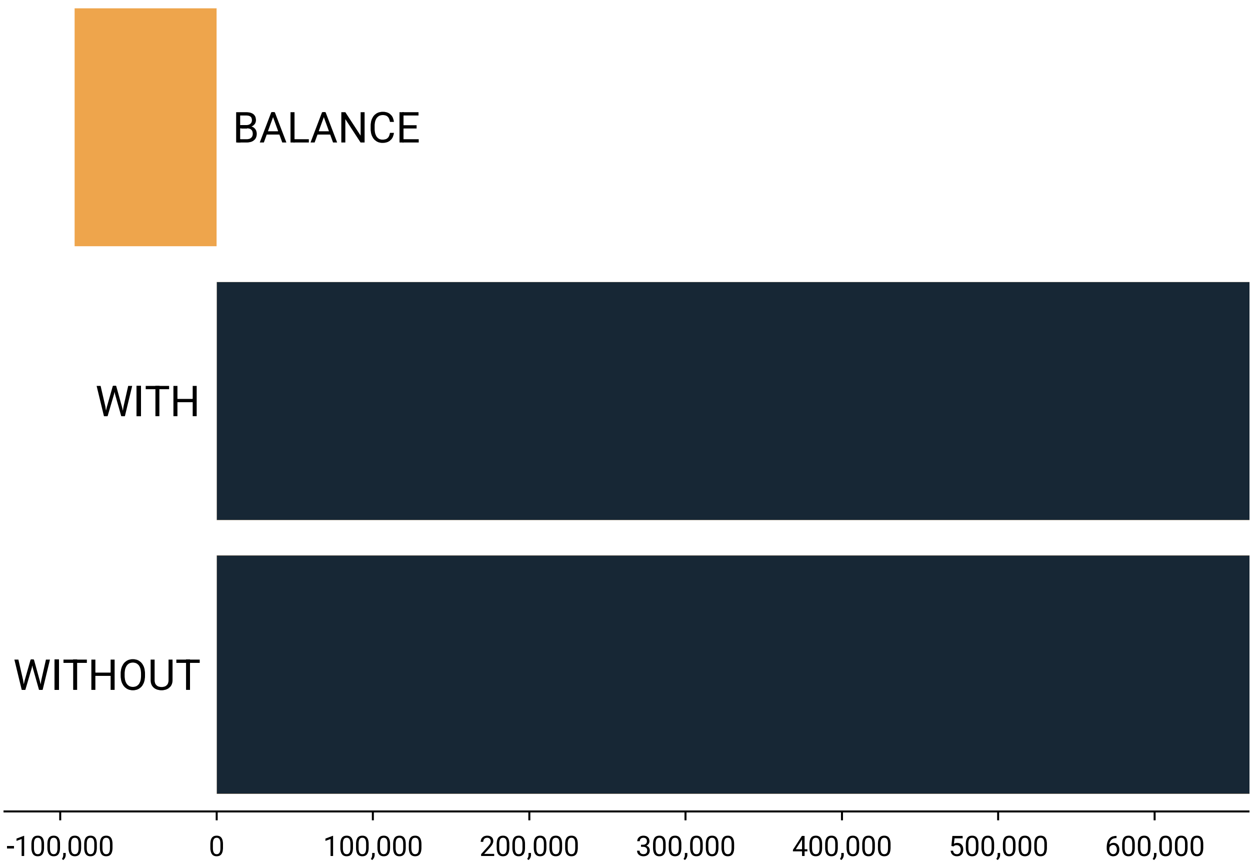
1	1	1	0

ILED MATRIX OF CHANGES I

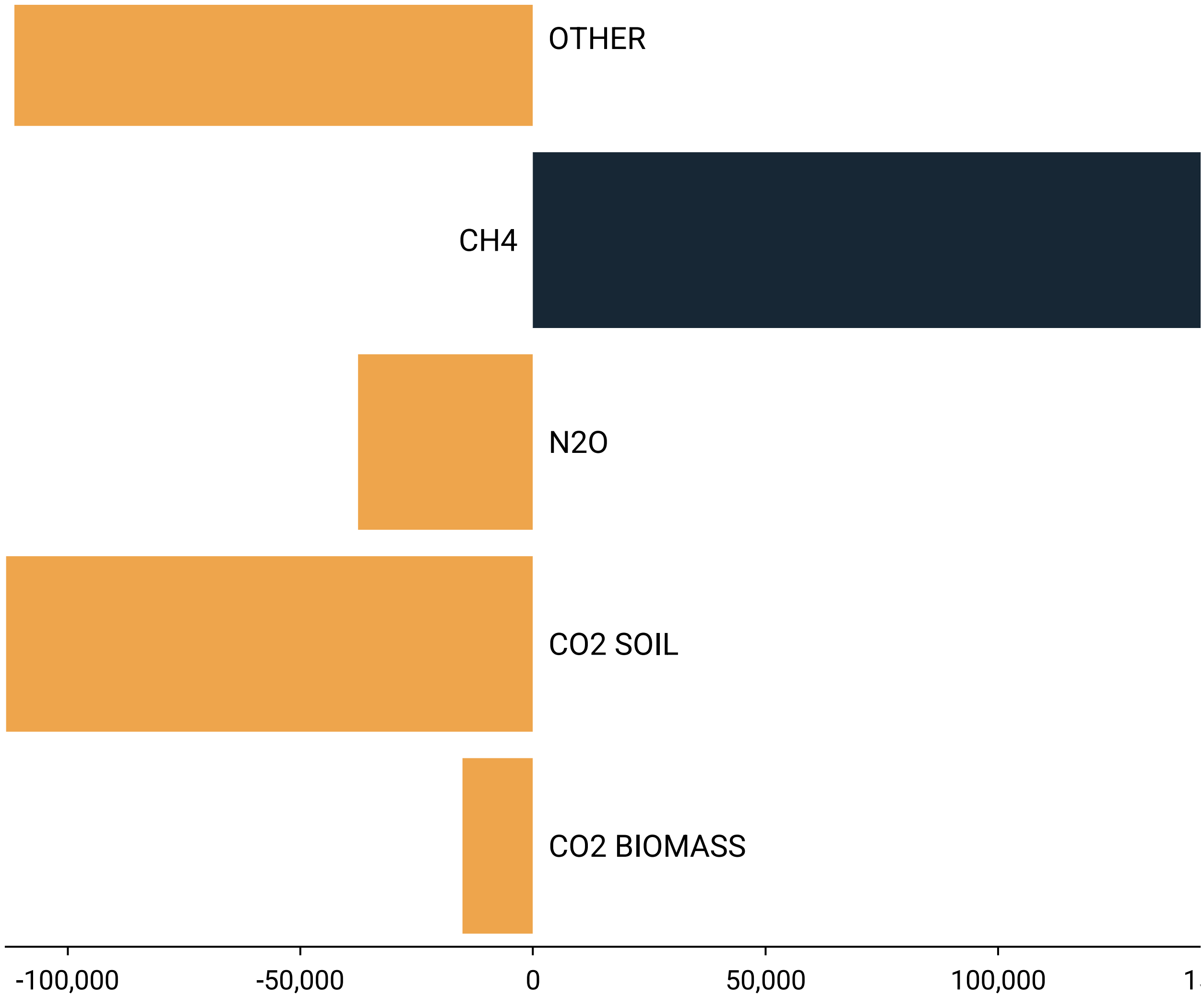
Perennial	Flooded rice	Grassland	Degraded land
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Perennial	Flooded rice	Grassland	Degraded land
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

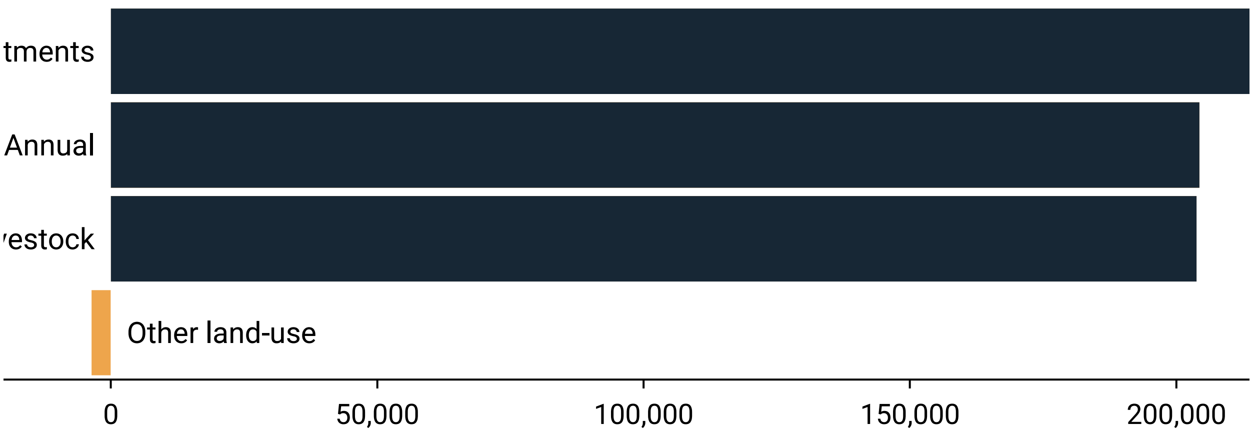
Net fluxes, in tCO_2-e



Share of the balance per GHG, in t



Gross Fluxes With Project, in tC



LTS

	40,075
	40,075
	0
	0

Global warming potential (100 yrs)	
CO_2	1
CH_4	34
N_2O	298

AVERAGE ANNUAL EMISSIC

In tCO_2-e/yr

CH_4	OTHER	WITHOUT	WITH
0		0	0
0		0	0
0		53	-182
0		16,683	10,217
0		0	0
0		0	0
0		0	0
186,569		0	10,189
0		0	0
0		0	0
0	0	0	0
	-111,451	22,028	13,996
186,569	**-111,451**	**38,763**	**34,221**
4.7	**-2.8**		
0.2	**-0.1**	**0.0**	**0.0**

Uncertainty level	tCO2-e/yr
Without	38,763
With	34,221
Balance	-4,543

FOR MINERAL SOILS

Other land	Total area (ha)
0	0
0	37,760
0	0

Total area (ha)
Mineral soil
Organic soil
Waterbodies

0	0
0	315
0	0
0	2,000
0	40,075

Other land	Total area (ha)
0	0
0	37,760
0	0
0	0
0	315
0	0
1,685	2,000
1,685	40,075

ANIC SOILS

AVERAGE ANNUAL EMISSIC

In tCO_2-e/yr

CH_4 SOIL	FIRE	WITHOUT	WITH
0	0	0	0
0	0	0	0

0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	**0**	**0**	**0**
0.0	**0.0**		
0.0	**0.0**	**0.0**	**0.0**

Uncertainty level
Without
With
Balance

Share of the balance per activities, ir

0 0 1 1 1

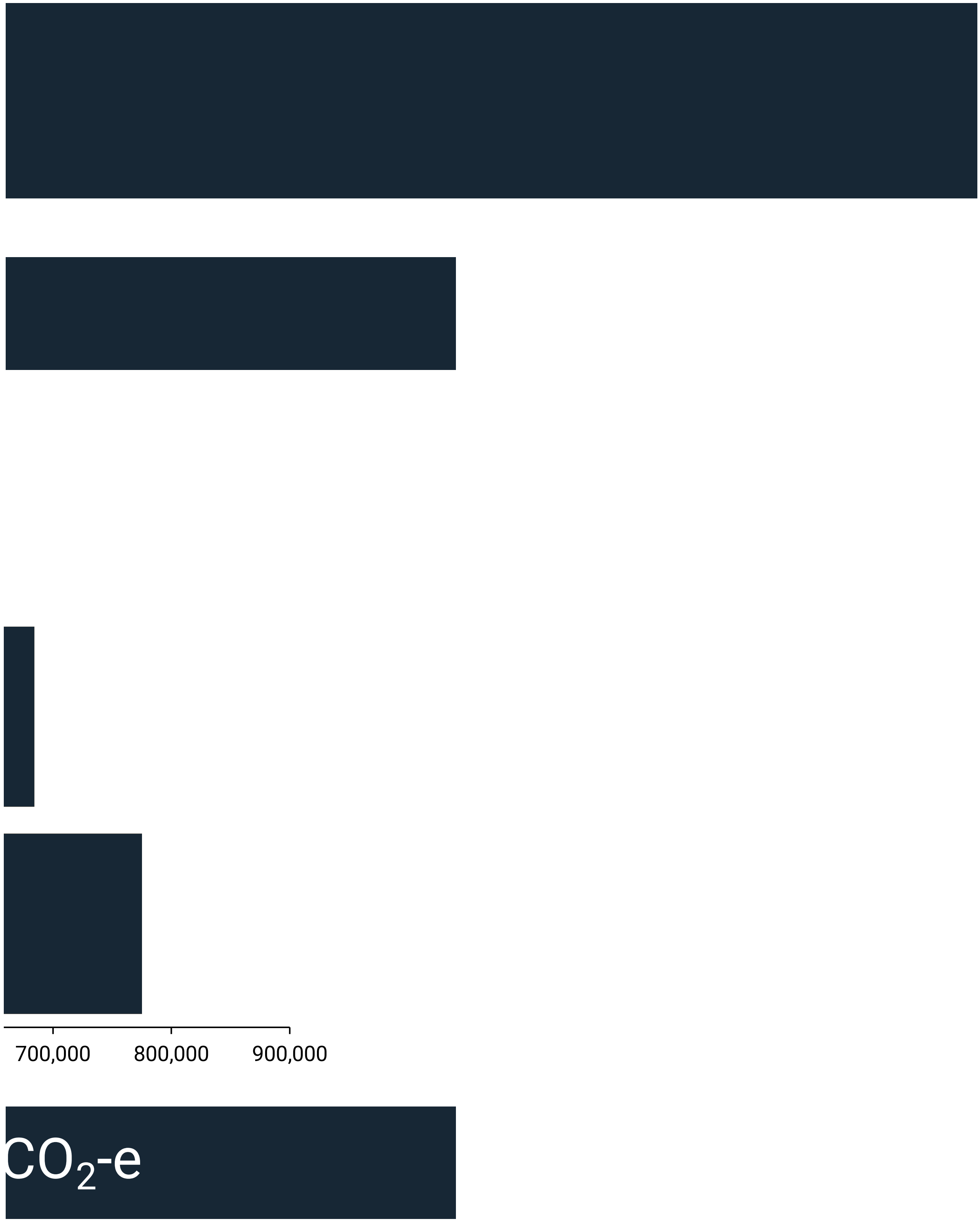
Gross Fluxes With Project, in tCO

nanagement

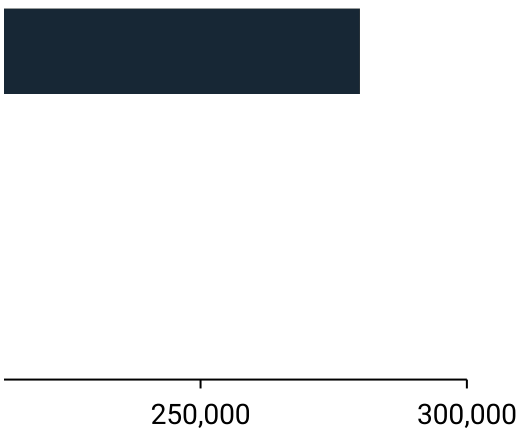
FOR ORGANIC SOILS

Other land	Total area (ha)
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0

Other land	Total area (ha)
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0


700,000
800,000
900,000
CO_2-e

O_2-e



ONS

BALANCE
0
0
-235
-6,466
0
0
0
10,189
0
0
0
-8,031
-4,543
0.0

Percent
33%
33%
30%

40,075
40,075
0
0

ONS

BALANCE
0
0

0
0
0
0

0

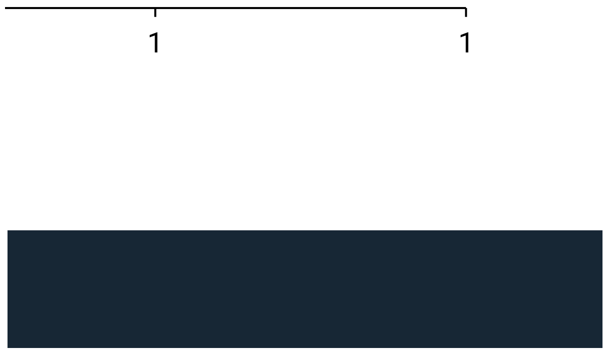
0.0

tCO2-e/yr	Percent
0	0%
0	0%
0	0%

n tCO_2-e

1 1 2

D_2-e


1
1

component, outcome, output	reference	START
date:	**9/1/2022**	
Title:	**ADDITIONAL FINANCING - YEMEN FOOD SECURITY RESPONSE**	
Total cost:	150,000,000	USD
Project duration:	20	years
Implementation phase:	5	years
Capitalization phase:	15	years
Geographical area:	National (waiting for identification of target areas)	
Soil:	HAC soils	
GSOC	15.42	tC/ha
Climate:		
Mean annual Precipitation	115.434	mm
Mean annual Temperature	26.422	ºC
elevation	692.040	m
PET		mm
Components		
1		
2	Increasi	
3	Horticultural develop	
4	(	
5		

According to the general context of Yei

EX-ACT ANALYSIS

Component, outcome, output	reference	START
all data presented might be subject to modifications as project design advances		
COMPONENT 1		
1.a. Agricultural land improvement		
terracing	set -aside (annual fallows)	1000
	terracing -agroforestry	0
terracing	set -aside (annual fallows)	1000
	terracing -agroforestry	0
1.b. Irrigation Improvement		
	Low carbon	3000
	Medium carbon	0

1.d. Rural road improvement			
	bare land (non-vegetated)		192000
	Road		
COMPONENT 2.1			
2.1.a. Crop production			
seed producing groups	traditional practices (grains)		5,440.0
	Improved seed producer (grains)		-
fodder production improvement	fodder production- traditional		2800
	fodder production- improved		
	fodder production- improved (irrigated)		
2.1.b. Vaccination			
Increase in livestock due to reduced mortality	Small ruminants		0
	Goat		
	Sheep		
COMPONENT 2.2			
2.2.a. Support to micro-small and medium livestock producers			
	Skimmer/cooling tank		0
2.2.c. Sesame production			
	Sesame - Traditional		9,520.0
	Sesame - adopted practed		
COMPONENT 3			
3.a Improved Kitchen gardens			
farmer field schools	horticulture - traditional		20000
	horticulture- adoption practices		0
fertilizer use	traditional		3000
	(NPK) adoption of practices		
3.c. Innovation activities			
Horticulture (kitchen gardens)	bare land (non-vegetated)		315
	grassland		315
	annual cropland (vegetables)		
SUPPORTING DATA			
fertilizer use in horticulture	NPK (20-20-20)		150
	compost		0
Cattle		-0.0094	-0.008450673
Goats		-0.0058	-0.005214659
Sheep		-0.0034	-0.003037572
% of sheep and goats		STOCKS 2019	

goats	0.488446194	8366631
sheep	0.511553806	8762443

FAO stat - yemen- area harvested - 2019		
TOTAL	868531	
PERENNIALS	124536	0.143386937
ANNUALS	743995	
CEREALS	528078	
VEGETABLES	69006	0.130673878

crop	ha
Almonds, with shell	6474
Apples	2204
Apricots	681
Bananas	9431
Barley	27344
Beans, dry	1474
Beans, green	423
Broad beans, horse beans, dry	4788
Cabbages and other brassicas	710
Carrots and turnips	1566
Cereals nes	
Chick peas	18281
Chillies and peppers, green	2940
Coffee, green	34981
Cow peas, dry	26062
Cucumbers and gherkins	994
Dates	14765
Eggplants (aubergines)	620
Figs	547
Fruit, citrus nes	36
Fruit, fresh nes	14358
Fruit, stone nes	415
Fruit, tropical fresh nes	477
Garlic	480
Grapes	11784
Groundnuts, with shell	2141
Leeks, other alliaceous vegetables	999
Lemons and limes	2496
Lentils	9552
Lettuce and chicory	343
Maize	36578
Mangoes, mangosteens, guavas	26114
Melons, other (inc.cantaloupes)	3524
Millet	92774
Okra	4539
Onions, dry	15448

Oranges	7869
Papayas	1562
Peaches and nectarines	2766
Pears	140
Peas, dry	1526
Plums and sloes	0
Potatoes	15711
Pulses nes	11838
Pumpkins, squash and gourds	1451
Quinces	375
Seed cotton	21639
Sesame seed	20621
Sorghum	313916
Sugar cane	0
Sweet potatoes	42
Tangerines, mandarins, clementines, satsu	1419
Tobacco, unmanufactured	13236
Tomatoes	7781
Vegetables, fresh nes	3234
Walnuts, with shell	0
Watermelons	9596
Wheat	57466

TO BE CONSIDERED WHEN MORE INFORMATION BECOMES AVAILABLE:

adoption rates
implementiation rates
operational phase of groundwater irrigated systems
units and type equipment to be established
ditches and canals to be constructed

Item	Year Code	Year
cattle	2005	2005
cattle	2006	2006
cattle	2007	2007
cattle	2008	2008
cattle	2009	2009
cattle	2010	2010
cattle	2011	2011
cattle	2012	2012
cattle	2013	2013
cattle	2014	2014
cattle	2015	2015

cattle	2016	2016
cattle	2017	2017
cattle	2018	2018
cattle	2019	2019
goats	2005	2005
goats	2006	2006
goats	2007	2007
goats	2008	2008
goats	2009	2009
goats	2010	2010
goats	2011	2011
goats	2012	2012
goats	2013	2013
goats	2014	2014
goats	2015	2015
goats	2016	2016
goats	2017	2017
goats	2018	2018
goats	2019	2019
sheep	2005	2005
sheep	2006	2006
sheep	2007	2007
sheep	2008	2008
sheep	2009	2009
sheep	2010	2010
sheep	2011	2011
sheep	2012	2012
sheep	2013	2013
sheep	2014	2014
sheep	2015	2015
sheep	2016	2016
sheep	2017	2017
sheep	2018	2018
sheep	2019	2019

WITHOUT	WITH	unit

: AND RESILIENCE PROJECT

(2021-2026)

TIER 2 VALUES CALCULATED IN LUC

Improving agricultural production infrastructure

ing domestic food production and market develo

ıment to improve nutritional status and incomes (

Capacity building for food security management

Project management

nen it is assumed that the project wil achieve

WITHOUT	WITH	unit
1000	0	ha
0	1000	ha
1000	0	ha
0	1000	ha
3000	0	ha
0	3000	ha

192000		m2
	192000	m2
5,440.0	0	ha
-	5440	ha
2800		
	1,120	
	1,680	
0	1,648,540	
	824,270	
	27,476	
	824,270	
	34,345	
0	26.28	M3 petrol/
9,520.0		ha
	9,520.0	ha
20000	4000	ha
0	16000	ha
3000	600	t/year
	1200	t/year
315	0	ha
315	0	ha
	630	ha
150	75	kg/ha
0	2000	kg/ha

proportion of perennials per area harvested in

proportion between cereals and vegetables

Unit	Value	Growth Rate
Head	1447243	
Head	1463700	0.01
Head	1495000	0.02
Head	1531000	0.02
Head	1567295	0.02
Head	1605000	0.02
Head	1654000	0.03
Head	1684367	0.02
Head	1721906	0.02
Head	1768442	0.03
Head	1748989	-0.01

Head	1697277	-0.03
Head	1671954	-0.01
Head	1503452	-0.10
Head	1413414	-0.06
Head	7864122	
Head	8041955	0.02
Head	8414000	0.05
Head	8708000	0.03
Head	8883315	0.02
Head	9016000	0.01
Head	9106000	0.01
Head	9158464	0.01
Head	9255373	0.01
Head	9379831	0.01
Head	9267273	-0.01
Head	9081917	-0.02
Head	9004596	-0.01
Head	8644657	-0.04
Head	8366631	-0.03
Head	7980213	
Head	8197024	0.03
Head	8589000	0.05
Head	8889000	0.03
Head	9087216	0.02
Head	9206000	0.01
Head	9358000	0.02
Head	9419212	0.01
Head	9551311	0.01
Head	9688145	0.01
Head	9571887	-0.01
Head	9104860	-0.05
Head	9185435	0.01
Head	8813076	-0.04
Head	8762443	-0.01

ASSUMPTIONS (trends,

leptosols+ calcisols+luvisols+gypsisols

1981-2019
1979-2019

pment

of rural households

a <u>90% implementation</u> in all activities

ASSUMPTIONS (trends,

lands not able to cultivate
COFFEE
lands not able to cultivate
SORGHUM

Target is 4,000 farming beneficiaries. Average farm size is 1.36 Ha p
better land preparation and high carbon input with manure
support 4000 HH to improve 2800 ha (60% irrigated) improved wit

Assuming it is slaughted in a 0.5 year (compared to its avearage live

Assuming it is slaughted in a 0.5 year (compared to its avearage live

25kwh=3l, working 24 hours, 365 days

Target is 7,000 farming beneficiaries. Average farm size is 1.36 Ha p

20,000 Producers trained; 90% adoption of practices; 1 ha/farmer
150 kg/ha /year of NPK (20-20-20)
75kg/ha /year of NPK (20-20-20)

6300 beneficiaries establishing gardens of 0.1ha

Average Last 14 years

-0.001

0.005

0.007

SOURCES	NOTES	LINKS ANI CODE
Project Paper 3		
communication with FAO Yemen	the targeted areas were not definedwhen preparing the ar	
Harmonized soil database	most dominant soils	**Data deper**
CHIRPS sourced from earthmap		
ECMWF ERA5 sourced from earthmap		
Project Paper 14		
Project Paper 15		
Project Paper 20		
Project Paper 22		
Project Paper 24		
implmenting organization		

SOURCES	NOTES
EFA	
EFA	
EFA	
EFA	

PP, FAO CENSUS, 2002 (https://www.fao.org/3/bs602e/bs602e.pdf)	
PP	
h the use of alfalfa, rhodes and cowpea	reduced tillage, low carbon input
	reduced tillage, low carbon
	reduced tillage, medium carbon
EFA	
EFA	
:span of 15 years)	
EFA	
:span of 12 years)	
EFA	
EFA	
EFA	
EFA	
EFA	
Consultation with the Implementation Agency	
Consultation with the Implementation Agency	
EFA	
EFA	
EFA	

Average Last 10 years	Average Last 5 years
-0.009	-0.043

-0.006	-0.023
-0.003	-0.020

Type of
Yellowf
Commo
Little Tu
Longtai
Indian M
Snappe
Cuttlefis
Gold Ba
Frigate
Spotted
King fis
Groupe

Groupe
Cobia
Other Sp

Fish	%
fin Tuna	47
on dolphinfish	25
una	7
il Tuna	6.5
Mackerel	5
er	3
sh	1
and fusilier	0.7
Tuna	0.3
d shark	0.2
sh	0.2
er	0.05

[illegible]		[illegible]
		0.05
pecies		4

User can find climate and soil related data on Earth Map:
www.earthmap.org
The website allows also to run a script to download all the data of interest to EX-ACT analysis for a prese

elected polygon (NB. The script may not run correctly for larger areas due to server calculation capaity lin *nits). The downloaded data may be pasted here and subsequently must be processed by the user to deriv* *ve the average values to be included in the EX-ACT analysis.*

Definitions cropland

Long-term cultivated
Perennial tree/woody crops
Full tillage
Reduced tillage
No-till
Low carbon input
Medium carbon input
High carbon input without organic amendments
High carbon input with organic amendments

Perennial systems / Agroforestry systems
Fallows
Hedgerows
Alley cropping
Multistrata systems
Parklands
Shaded perennial crop systems
Silvoarable systems
Silvopastoral systems

Flooded rice
Irrigated
Continuously flooded
Single drainage
Multiple drainage
Rainfed and deep water

Rainfed, wet season (regular rainfed)
Rainfed, dry season (drought prone)
Deep water
Flooded pre-season (>30 days)
Non flooded pre-season (>180 days)
Non flooded pre-season (< 180 days)
Cropping season
Straw incorporated shortly (<30 days) before cultivation
Straw incorporated long (<30 days) before cultivation

Definitions livestock

Main livestock categories
Dairy cattle
Dairy cattle in high-productivity systems
Dairy cattle in low-productivity systems

Other cattle in high-productivity systems
Other cattle in low-productivity systems
Other livestock in high-productivity systems
Other livestock in low-productivity systems

Regional characteristics for cattle and b
North America
Western Europe
Eastern Europe
Oceania

Latin America
Asia
Africa
Middle East
Indian subcontinent

Manure management systems

Manure management systems
Pasture/Range/Paddock
Daily spread

Solid storage
Dry lot
Liquid/Slurry
Lagoons (uncovered anaerobic)
Pit storage below animal confinements
Anaerobic digester
Burned for fuel
Pit storage below animal confinements
Poultry manure
Composting

Represents area that has been continuously managed for predominantly annual crops over 50 yrs.
Long-term perennial tree crops such as fruit and nut trees, coffee and cacao.
Substantial soil disturbance with full inversion and/or frequent (within year) tillage operations. At planting time, little (e.g., <30%) of the surface is covered by residues.
Primary and/or secondary tillage but with reduced soil disturbance (usually shallow and without full soil inversion). Normally leaves surface with >30% coverage by residues at planting.
Direct seeding without primary tillage, with only minimal soil disturbance in the seeding zone. Herbicides are typically used for weed control.
Low C input cropland systems are defined by one of the following conditions: (1) The crop residues of annual crops are removed or burnt without using organic amendments (e.g. manure) or (2) Low residue yielding crops are cultivated (e.g cotton, green maize, vegetables, tobacco) or frequent rotation with bare fallow without organic amendments, cover crops/green manures, and mixed crop/grass systems or (3) Annual crops with no mineral fertilization or N-fixing crops without irrigation, cover crops/green manures, vegetated fallows, high residue yielding crops and mixed crop/grass systems
Medium C input cropland systems are defined by one of the following conditions: (1) annual cropping with cereals where all crop residues are returned to the field; or (2) the crop residues of annual crops are removed or burnt BUT organic amendments (e.g. manure) are applied or (3) low residue crops are cultivated (e.g cotton, green maize, vegetables, tobacco) or frequent rotation with bare fallow BUT using practices that increase C input above low residue varieties such as using organic amendments, cover crops/green manures, and mixed crop/grass systems or (4) annual crops with no mineral fertilization or N-fixing crops BUT using practices that increase C input by enhancing residue production such as irrigation, cover crops/green manures, vegetated fallows, high residue yielding.
The crop residues of annual crops are neither removed nor burnt. It represents significantly greater crop residue inputs over medium C input cropping systems due to additional practices, such as production of high residue yielding crops, use of green manures, cover crops, improved vegetated fallows, irrigation, frequent use of perennial grasses in annual crop rotations, but without manure applied.
Represents significantly higher C input over medium C input cropping systems due to an additional practice of regular addition of animal manure.

Land rested from cultivation, but comprises planted and managed trees, often leguminous, shrubs and herbaceous cover crops before it is cultivated again. Includes improved and natural fallows, and can be implemented before any of the following systems.
Linear plantation around fields, including shelterbelts, windbreaks, boundary plantings and live fences
Fast-growing, usually leguminous, woody species (mainly shrubs) grown in crop fields, usually at high densities. The woody species are regularly pruned and the prunings are applied as mulch into the alleys as a source of organic matter and nutrients. Also known as intercropping.
Multistorey combinations of a large number of various trees and perennial and annual crops. They include home gardens and agroforests.
Intercropping of agricultural crops or grazing land under low density mature scattered trees. Typical of dry areas like Sahel (e.g. Faidherbia albida).
Growing shade-tolerant species such as cacao and coffee under, or in between, overstorey shade trees that can be used for timber or other commercial tree products
Woody species planted in parallel tree rows to allow mechanization and intercropped with an annual crop; usually used for timber (e.p. Juglans spp), but also for fuel (e.g. Populus spp). Usually low tree density per hectare.
Woody species planted on permanent grasslands, often grazed.

Fields are flooded for a significant period of time and the water regime is fully controlled.
Fields have standing water throughout the rice growing season and may only dry out for harvest end-season drainage. Rice is cultivated under continuously flooded condintion but sometimes an end-season drainage before rice harvest included.
Fields have a single drainage event and period during the cropping season at any growth stage, in addition to the end of season drainage. One mid-season drainage and an end-season drainage are adopted over the entire rice-growing season.
Fields have more than one drainage event and period of time without flooded conditions during the cropping season, in addition to an end of season drainage, including alternate wetting and drying (AWD). Also called 'intermittent irrigation', in which the number of drainage events was not clear, but there are more than one events during the growing season.
Fields are flooded for a significant period of time with water regimes that depend solely on precipitation.

Rice cultivation that relies on rainfall for water, in this case the field is flood prone during the rice-growing season. The water level may rise up to 50 cm during the cropping season.

Rice cultivation that relies on rainfall for water, in this case the field is drought prone during the rice-growing season. Drought periods occur during every cropping season.

Water level rises to more than 50 cm above the soil for a significant period of time during the cropping season.

Permanently flooded rice fields are assumed to have a preseason water regime of ‘flooded pre-season’. Late rice (e.g., in China) is usually planted immediately after early rice on the same field and is therefore regarded as having a pre-season water regime of ‘flooded pre-season’.

If rice is planted once a year and the field is not flooded in the non-rice growing season, the preseason water regime is classified as ‘non flooded pre-season >180 d’.

Rice is planted more than once a year, but there is more than one month of fallow time between the two seasons, ‘non-flooded pre-season <180 d’ usually implies pre-season drainage.

Refers to the number of times rice is harvested per year. By default 1.

Straw applied just before rice transplanting as on-season; straw that is left on the soil surface in the fallow season and incorporated into the soil before the next rice transplanting is also categorized as ‘straw incorporated shortly (<30 days) before cultivation’. The amount of straw return is expressed in dry weight (t ha-1).

Straw incorporated into soils in the previous season (upland crop or fallow) is categorized as ‘straw incorporated long (>30 days) before cultivation’. The amount of straw return is expressed in dry weight (t ha-1).

Productivity systems

Mature cows (first lactation and beyond) that are producing milk in commercial quantities for consumption. Dairy cow population should not be confused with multi-purpose cows that may be used for more than one production purpose milk, meat or draft.

High-yielding dairy cows that are concentrated in confinement production systems or grazing on high quality pastures with supplements. The farms are 100-percent market oriented for commercial milk production, for national markets and/or export; Purebred or crossbred cattle are genetically improved through selective breeding for milk production.

Low-yielding dairy cows, grazing non improved pastures, and using locally produced roughage (e.g. crop residues), and agro-industrial by-products. Local breeds or crossbred cows are bred locally, without intensive selection for milk productivity. Milk production is mostly for local market and local consumption.

Based on animal feeding systems using forage (e.g. high-quality grass) and concentrates in confinement production systems or grazing with supplements or on improved pastures, producing high rates of daily weight gain. Animals can be purebred or crossbred and are genetically improved through selective breeding for improved commercial meat production. Growing cattle may be finished young in "intensive grazing with supplements" or feedlot systems, and meat is produced for national markets and/or export.

Based on animal feeding systems where locally produced roughage (e.g. crop residues) or low quality rangelands represent the major source of feed utilized, producing low rates of daily weight gain. Animals can be represented by local breeds or may be crossbred and can also be used for multiple purposes such as draft, meat and milk for self consumption and markets.

Are 100 percent market oriented with high level of capital input requirements and high level of overall herd (flock) performance. Feed is purchased from local or international market or intensively produced on farm. Animals are improved through breeding practices for commercial production. The high-productivity systems are common in swine, poultry, goats and sheep production

Are mainly driven by local market or by self-consumption, with low capital input requirements and low level of overall herd (fowl) performance typically using large areas for production or backyards. Locally produced feed represents the major source of feed utilized or animals are kept-free range for major part or all of their production cycle, the yield of the activity being linked to the natural fertility of the land and the seasonal production of the pastures. The low-productivity systems are common in swine, poultry, goats and sheep production

uffalo

Cattle: Highly productive commercialized dairy sector feeding high quality forage and grain. Separate beef cow herd, primarily grazing with feed supplements seasonally. Fast-growing beef steers/heifers finished in feedlots on grain. Dairy cows are a small part of the population. There are no buffalo herds, but American bison may be raised.

Cattle: Highly productive commercialised dairy sector feeding high quality forage and grain. Dairy cows also used for beef calf production. Very small dedicated beef cow herd. Minor amount of feedlot feeding with grains.
Buffalo: Buffalo farming system is exclusively intensive. The concentrates are largely used only during the lactation phase. Animals are maintained in paddocks, grazing practices are not widespread.

Cattle: Commercialised dairy sector feeding based on forages and gains. Separate beef cow herd, primarily grazing. Minor amount of feedlot feeding with grains.
Buffalo: Commercialized buffalo sector feeding primarily with roughages. Buffaloes are managed according to their categories. Animals are maintained paddock and tied up during the winter, in summer they are allowed to graze.

Cattle: Commercialised dairy sector based on grazing. Separate beef cow herd, primarily grazing rangelands5 and hill country of widely varying quality. Growing amount of feedlot feeding with grains. Dairy cows are a small part of the population. No Buffalo herd.

Cattle: Commercialised dairy sector based on grazing. Separate beef cow herd grazing pastures and rangelands. Minor amount of feedlot feeding with grains. Growing non-dairy cattle comprise a large portion of the population.
Buffalo: Buffalo husbandry is based on extensive systems in native or cultivated pastures in lowlands and uplands, most often without supply of concentrated feed. Milk production is based on pasture with frequent supplementation of roughage (sugar cane, silage, etc.), with a predominance of one single milking.

Cattle: Commercialised dairy sector is experienced fundamental changes due to increasing number of large farms with intensive production system based on grains and forage. Cattle kept in traditional production systems are multi-purpose, providing draft power and some milk within farming regions. Cattle of all types are smaller than those found in most other regions.
Buffalo: Buffaloes are generally swamp type. Buffaloes are raised by smallholder farmers as source of draft power. Animals are commonly grazed in field and fed on agriculture residual products. Milk yield per cow is low. Nevertheless, the dairy buffalo breeding is rapidly developing in countryside of Asia.

Cattle: Commercialised dairy sector based on grazing with low production per cow. Most cattle are multi-purpose, providing draft power and some milk within farming regions. Some cattle graze over very large areas. Cattle are smaller than those found in most other regions.
Buffalo: Small-scale buffalo sector well-integrated with cropland. Animals are raised for multi-purpose. Feeding primarily depends on roughages and crop-residues. Minor commercial dairy buffalo farms feeding with concentrate feed mixture.

Cattle: Majority of cattle population is still kept by small holders in the traditional production systems. The animals are fed primarily by crop residues and are grazed. Most animals are dual-purpose. In contrast to the small-scale farms, commercial dairy sector is generally intensive, mainly based on compound feed and grains.
Buffalo: Buffalo farming system primarily based on smallholders rearing animals for meat, milk and draught. Animals obtain their feeding by grazing. Minor commercialized buffalo sector feeding forage and concentrate supplemented feed.

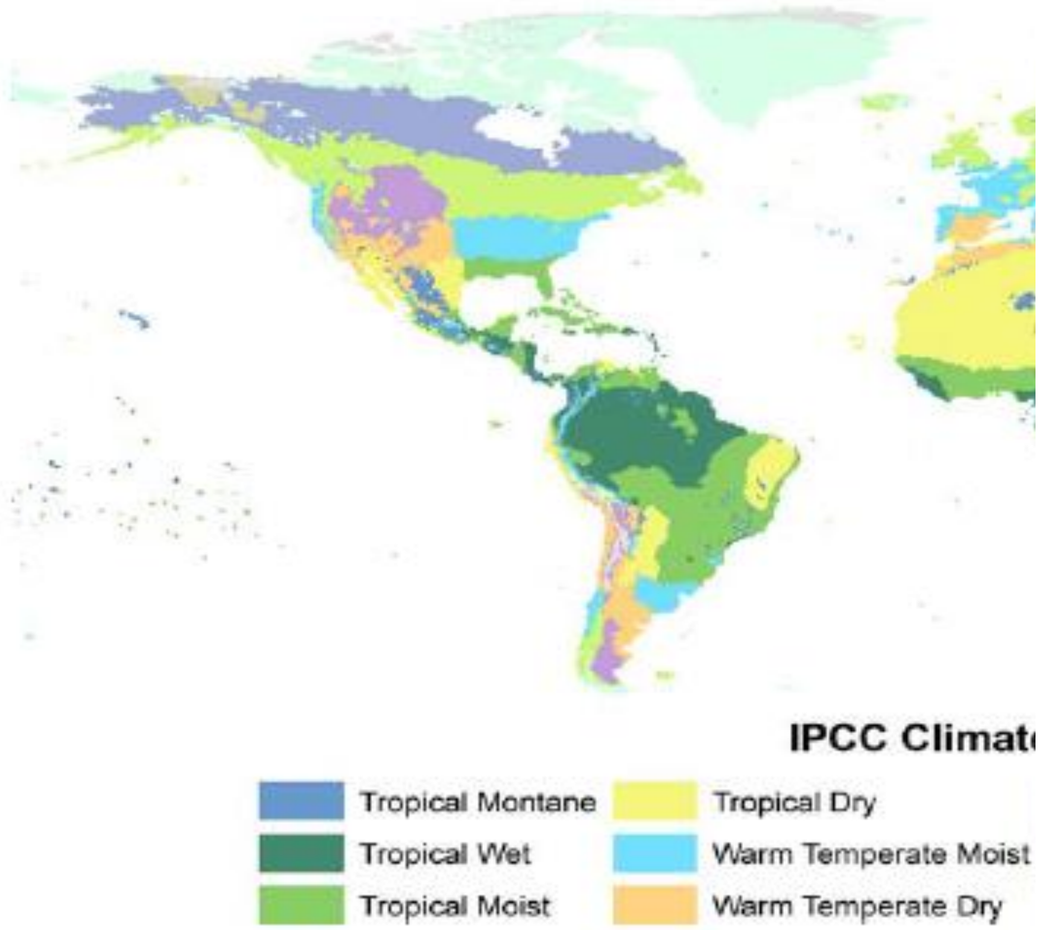
Cattle: Commercialised dairy sector based on crop by-product feeding with low production per cow. Most bullocks provide draft power and cows provide some milk in farming regions. Cattle in this region are the smallest compared to cattle found in all other regions.
Buffalo: Smallholder buffalo sector feeding poor quality roughages and crop-residues. Buffaloes are primarily free grazing. Concentrates are fed to dairy animals during last months of pregnancy. Dairy and meat production are intimately related. Animals are used as draft power. Minor commercialized buffalo sector providing animals with balanced ration.

The manure from pasture and range grazing animals is allowed to lie as deposited, and is not managed.

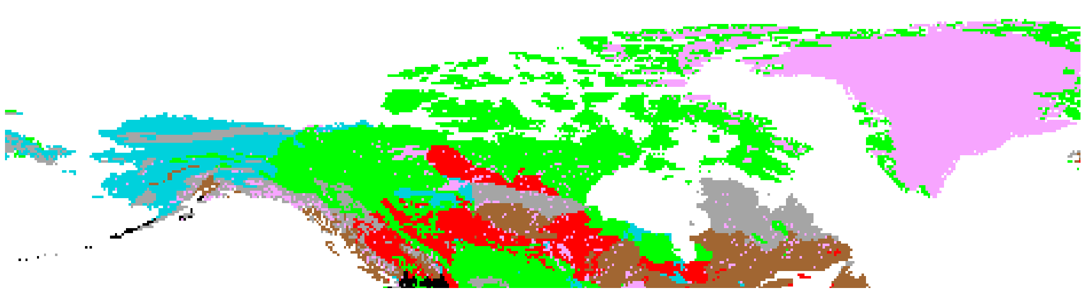
Manure is routinely removed from a confinement facility and is applied to cropland or pasture within 24 hours of excretion.

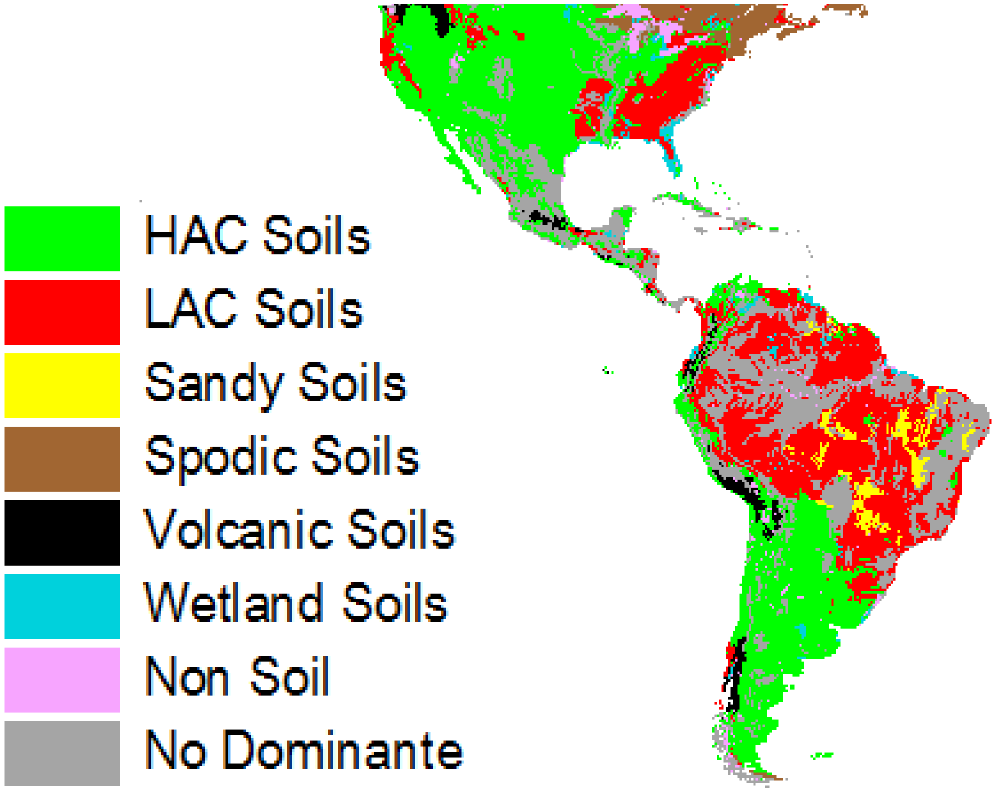
The storage of manure, typically for a period of several months, in unconfined piles or stacks. Manure is able to be stacked because of the presence of a sufficient amount of bedding material or loss of moisture by evaporation
A paved or unpaved open confinement area without any significant vegetative cover. Dry lots do not require the addition of bedding to control moisture. Manure may be removed periodically and spread on fields.
Manure is stored as excreted or with some minimal addition of water or bedding material in tanks or ponds outside the animal housing. Manure is removed and spread on fields once or more in a calendar year. Manure is agitated before removal from the tank/ponds to ensure that most of the VS are removed from the tank..
A type of liquid storage system designed and operated to combine waste stabilization and storage. Lagoons have a lower depth and a much larger surface compared to liquid slurry stores. Anaerobic lagoons are designed with varying lengths of storage (up to a year or greater), depending on the climate region, the volatile solids loading rate, and other operational factors. The supernatant water from the lagoon may be recycled as flush water or used to irrigate and fertilise fields.
Collection and storage of manure usually with little or no added water typically below a slatted floor in an enclosed animal confinement facility, usually for periods less than one year. Manure may be pumped out of the storage to a secondary storage tank multiple times in one year, or stored and applied directly to fields. It is assumed that VS removal rates on tank emptying are >90%
Anaerobic fermentation of slurry and/or solid. Biogas is captured and flared or used as a fuel.
The dung and urine are excreted on fields. The sun dried dung cakes are burned for fuel
Mixture of excreta and washing water, stored within the livestock building, usually below the confined animals
Similar to cattle and swine deep bedding except usually not combined with a dry lot or pasture. Typically used for all poultry breeder flocks, for alternative systems for layers and for the production of meat type chickens (broilers) and other fowl. Litter and manure are left in place with added bedding during the poultry production cycle and cleaned between poultry cycles, typically 5 to 9 weeks in productive systems and greater in lower productivity systems.
Biological oxidation of a solid waste including manure usually with bedding or another organic carbon source typically at thermophilic temperatures produced by microbial heat production.

CLIMATE



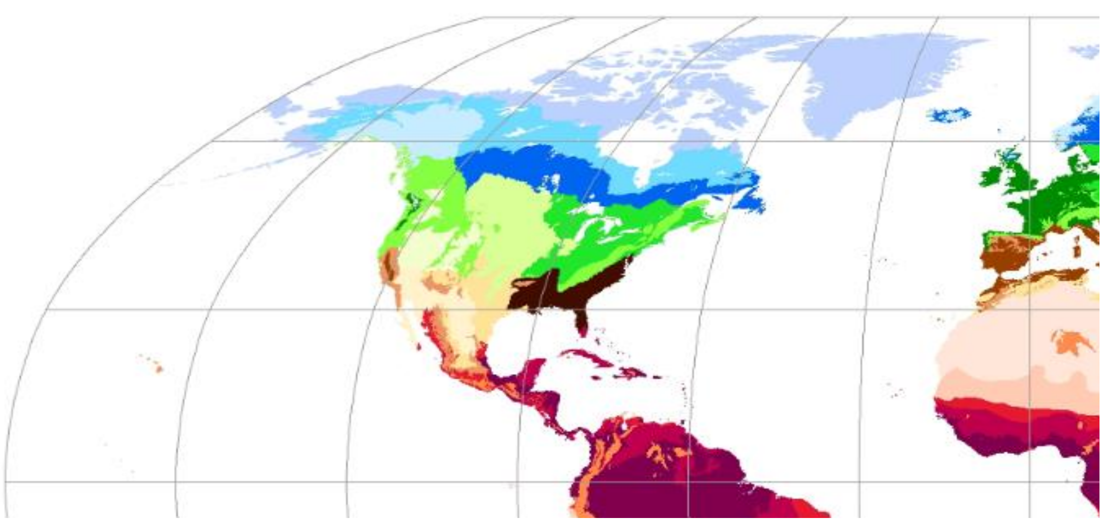
SOIL

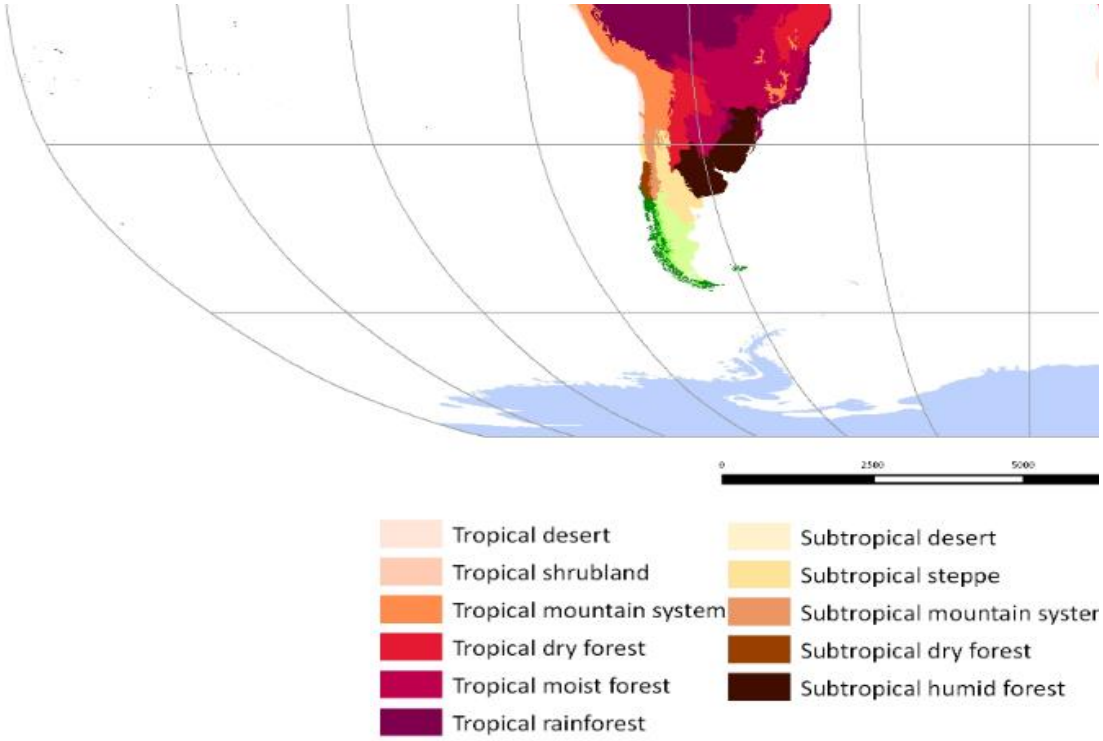




Note: for more detailed maps users can refer to:
[Harmonized World Soil Database](#)
[Earthmap](#)

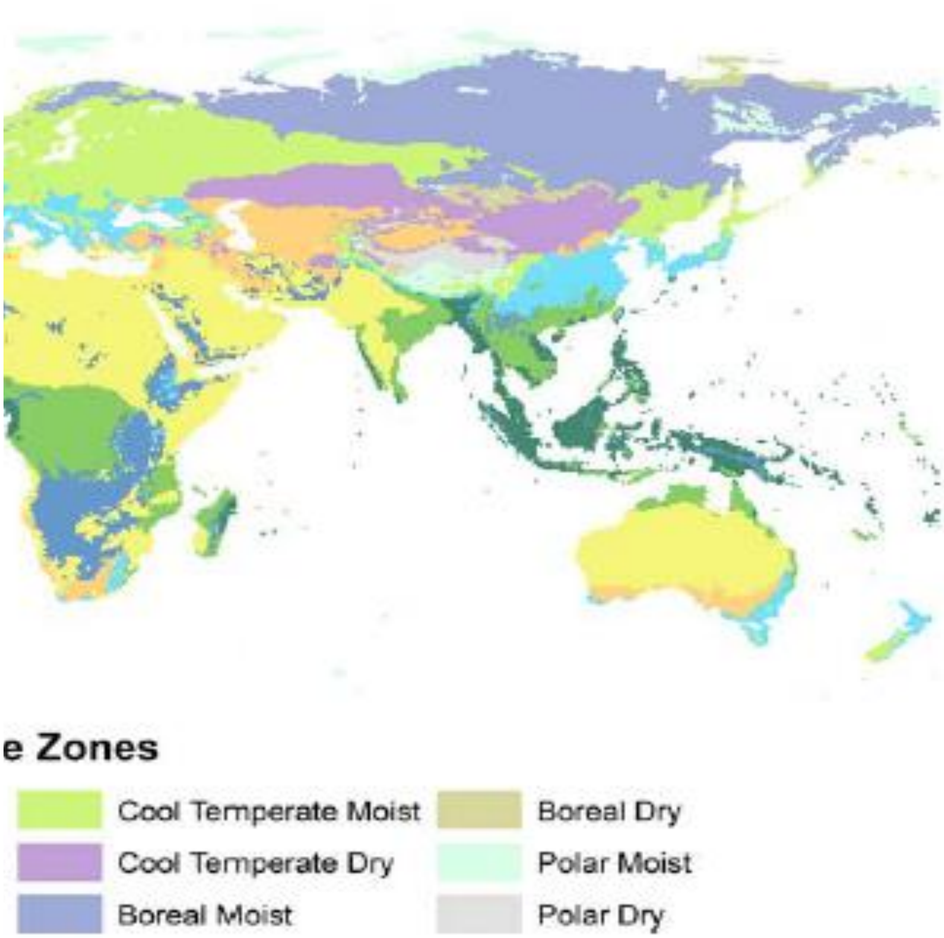
GLOBAL ECOLOGICAL ZONES

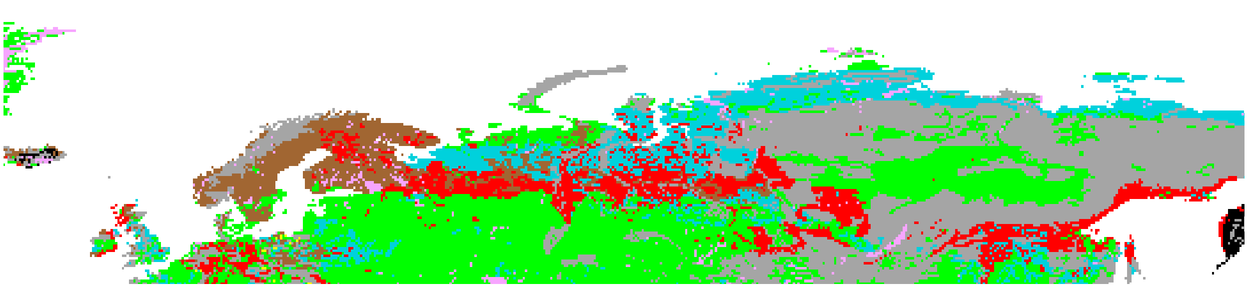


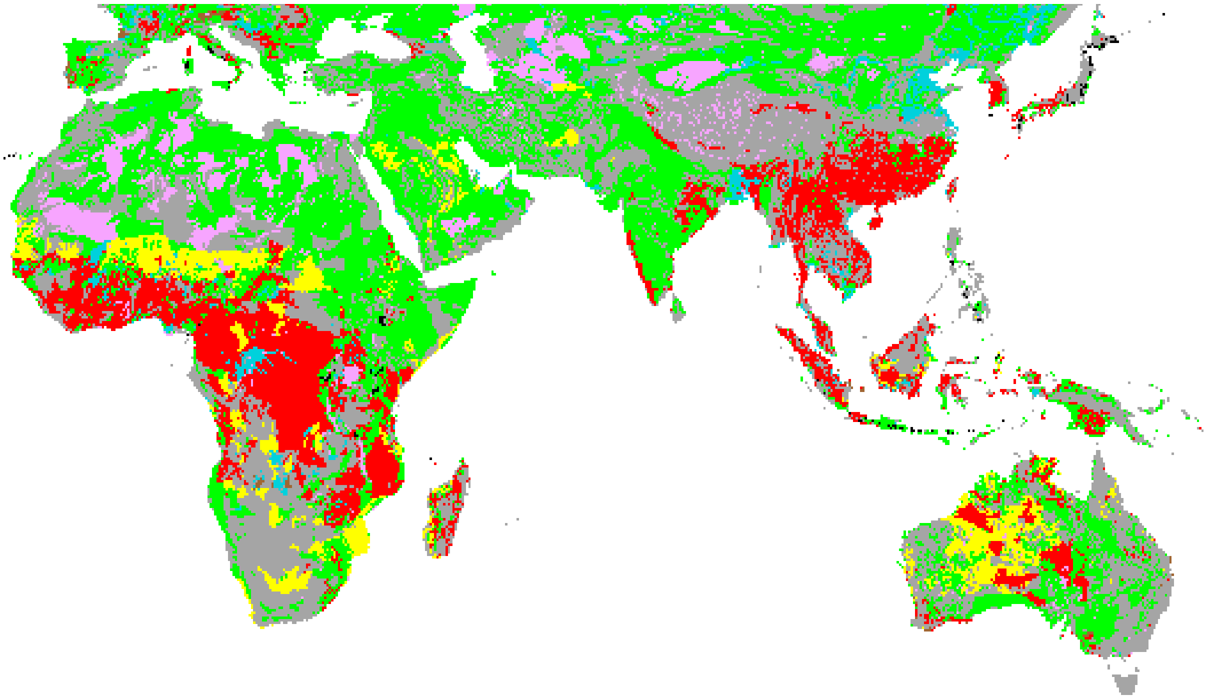


Source: FAO, 2015.

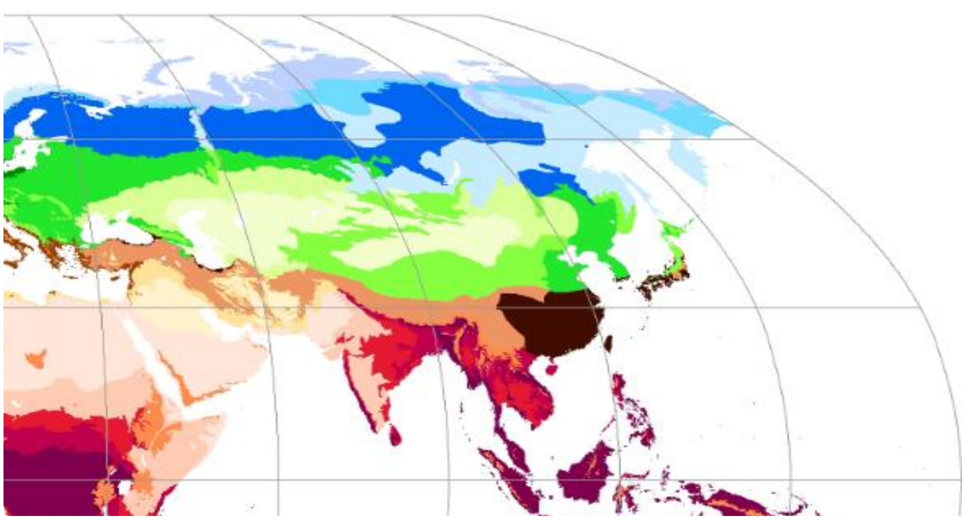
Global ecological zones for FAO Forest Reporting: 2010 Update, Forest Resour

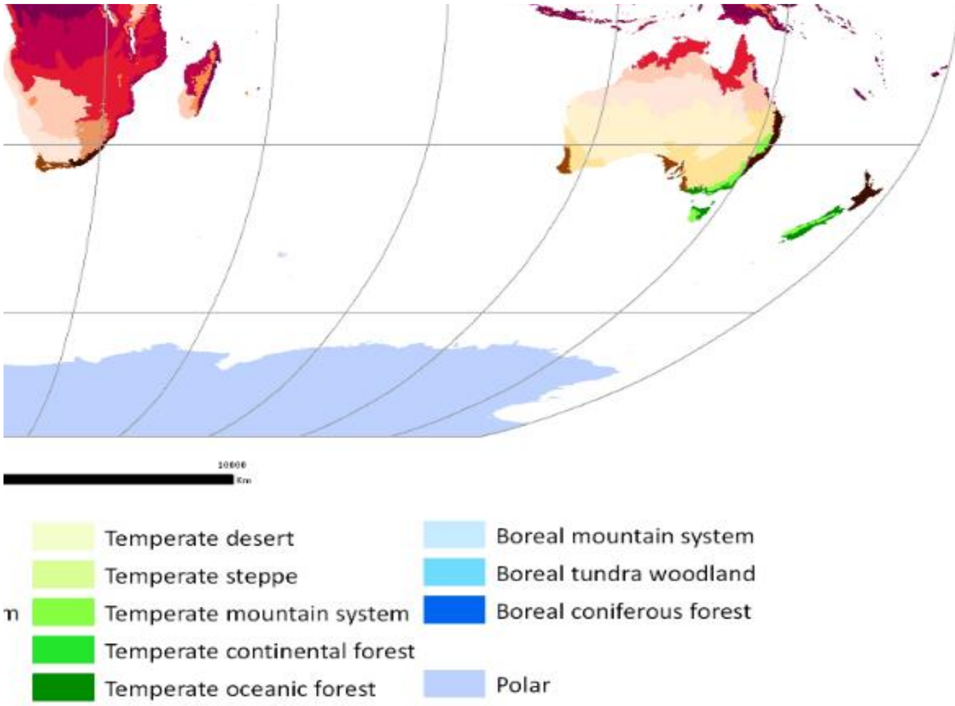

e Zones
Cool Temperate Moist
Cool Temperate Dry
Boreal Moist
Boreal Dry
Polar Moist
Polar Dry



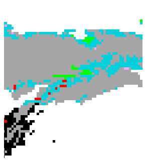


Back LUC



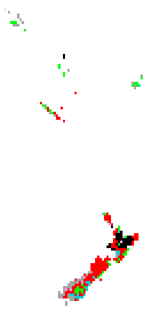

Temperate desert
Temperate steppe
Temperate mountain system
Temperate continental forest
Temperate oceanic forest
Boreal mountain system
Boreal tundra woodland
Boreal coniferous forest
Polar

CLIMATE IDENTIFIER		
MAT	Mean Annual Temperature in C	20.0
MAP	Mean Annual Precipitation in mm	2,400
PET	Potential Evapotranspiration in mm	1,000
Elevation	Elevation above sea level	900
Climate	***Tropical***	
Moisture	***Wet***	



Soil classification

WRB-2006	**IPCC**
Acrisol AC	LAC Soils
Albeluvisol AB	HAC Soils
Alisol AL	HAC Soils
Andosol AN	Volcanic Soils
Anthrosol AT	LAC Soils



Arenosol AR	Sandy Soils
Calcisol CL	HAC Soils
Cambisol CM	HAC Soils
Chernozem CH	HAC Soils
Cryosol CR	LAC Soils
Durisol DU	LAC Soils
Ferralsol FR	LAC Soils
Fluvisol FL	HAC Soils
Gleysol GL	Wetland Soils
Gypsisol GY	HAC Soils
Histosol HS	Organic Soils
Kastanozem KS	HAC Soils
Leptosol LP	HAC Soils
Lixisol LX	LAC Soils
Luvisol LV	HAC Soils
Nitisol NT	LAC Soils
Phaeozem PH	HAC Soils
Planosol PL	LAC Soils
Plinthosol PT	LAC Soils
Podzol PZ	Spodic Soils
Regosol RG	HAC Soils
Solonchak SC	LAC Soils
Solonetz SN	HAC Soils
Stagnosol ST	LAC Soils
Technosol TC	LAC Soils
Umbrisol UM	HAC Soils
Vertisol VR	HAC Soils

Climate and moisture regime to be specified in the "Description" module

Climate	Elevation in m	MAP and PET in mm	Climate & Moisture regime
MAT > 18	< 1000	MAP ≥ 2000	Tropical Wet
MAT > 18	< 1000	1000 ≤ MAP < 2000	Tropical Moist
MAT > 18	< 1000	MAP < 1000	Tropical Dry
MAT > 18	≥ 1000	MAP ≥ 1000	Tropical Montane
MAT > 18	≥ 1000	MAP < 1000	Tropical Montane
10 < MAT ≤ 18	< 1000	MAP > PET	Warm Temperate Moist
10 < MAT ≤ 18	< 1000	MAP < PET	Warm Temperate Dry
0 < MAT ≤ 10	< 1000	MAP > PET	Cool Temperate Moist
0 < MAT ≤ 10	< 1000	MAP < PET	Cool Temperate Dry
-10 < MAT ≤ 0	< 1000	MAP > PET	Boreal Moist
-10 < MAT ≤ 0	< 1000	MAP < PET	Boreal Dry
MAT ≤ -10	< 1000	MAP > PET	Polar Moist
MAT ≤ -10	< 1000	MAP < PET	Polar Dry

[redacted]