

CLIMATE-FRIENDLY AGRIBUSINESS VALUE CHAINS SECTOR PROJECT (CFAVC)



ហានិភ័យ ការប្រែប្រួលអាកាសធាតុ និងឌីកាស

ADB Loan No. 3661-CAM (COL)/8346-CAM (EF)
Grant No. 0579-CAM (EF)

CS2 - 002 SER: Capacity Building and Climate Smart
Agribusiness Consulting, Package 2

វគ្គទី១: ហានិភ័យការប្រែប្រួលអាកាសធាតុ និងឌីកាស

- 1 អ្វីជាហានិភ័យការប្រែប្រួលអាកាសធាតុ
- 2 តើកាត់បន្ថយហានិភ័យដូចម្តេច? កសិកម្មកើតឡើងវិញពីអាកាសធាតុ និងដីដាំដុះ
- 3 តើចែករំលែកហានិភ័យដូចម្តេច ? ការចូលរួមផ្គត់ផ្គង់ វិក័យបត្រឃ្នាំង សមធម៌ និង ការធនាវារប្រុង (ការបាត់បង់)
- 4 តើផ្ទេរហានិភ័យដូចម្តេច? ការធនាវារប្រុងដំណាំ
- 5 តើយើងទទួលបានហិរញ្ញប្បទានបែតងដូចម្តេច?

1

តើអ្វីជាហានិភ័យការប្រែប្រួលអាកាសធាតុ?

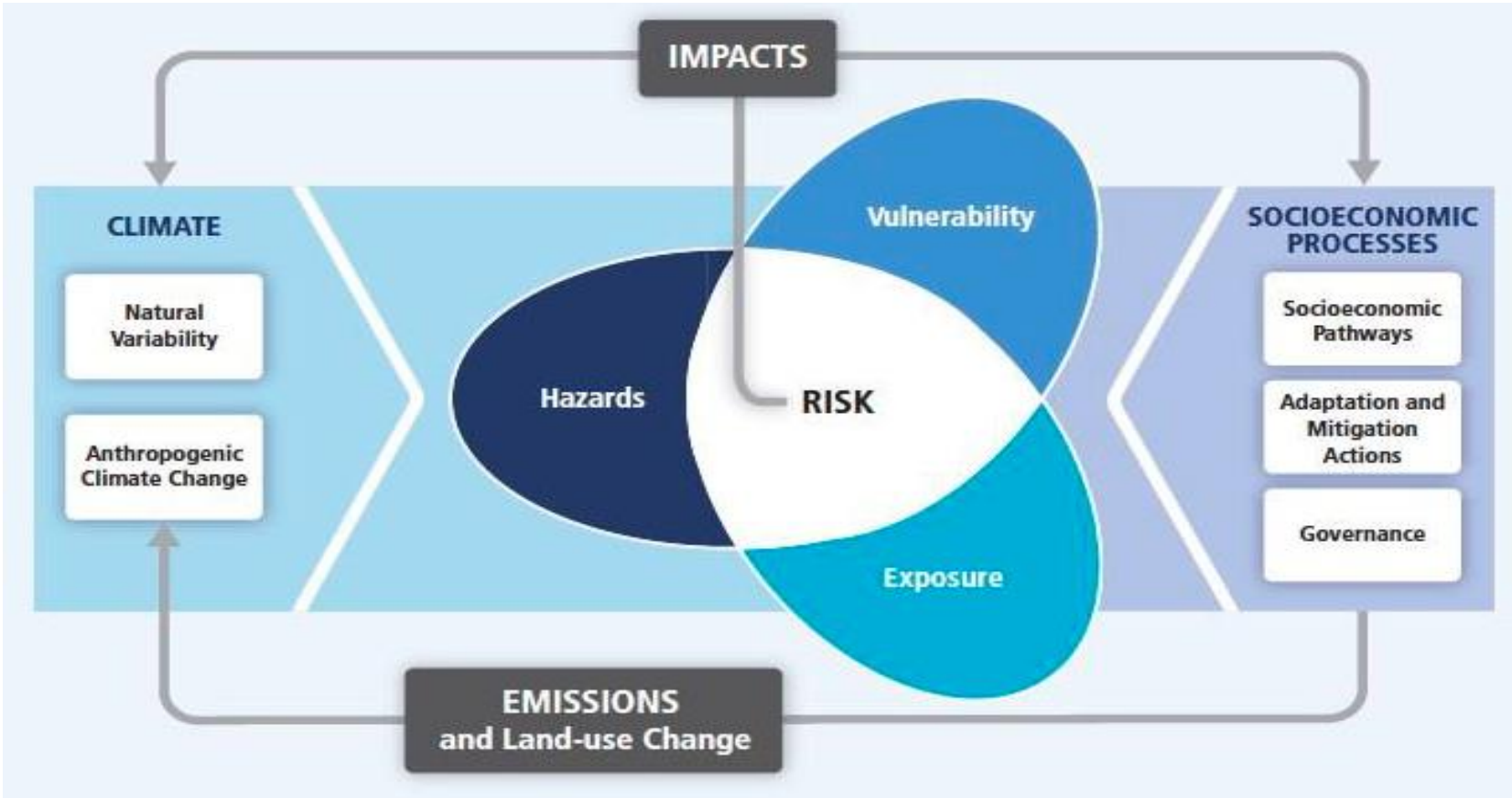
What are the climate risks?



ភ្លៀងធ្លាក់ > គ្រោះ
ទឹកជំនន់ គ្រោះរាំង
ស្ងួត គ្រោះមហន្តរាយ

សីតុណ្ហភាព >
កំដៅ, ផលិតផល

ទឹកសមុទ្រកើន
ឡើង > ការហូរច្រោះ,
sedimentation



- វិស័យងាយរងគ្រោះ:
1. កសិកម្ម និងសត្វស៊ីសុខស្បៀង
 2. ធនធានទឹក
 3. ហេដ្ឋារចនាសម្ព័ន្ធ & បរិស្ថាន environment
 4. ព្រៃឈើ និងដីវិវេស
 5. សុខភាព
 6. តំបន់ឆ្នេរ

អន្តរវិស័យ: អភិបាលកិច្ច, សេដ្ឋកិច្ចសង្គម – ជីវភាពនៃប្រជាជន និងសហគមន៍ងាយរងគ្រោះ, ការគ្រប់គ្រងគ្រោះភ័យនៃគ្រោះមហន្តរាយ, យេនឌ័រ និងបរិយាបណ្ណសង្គម (ក្រុមងាយរងគ្រោះ), សេវាអាកាសធាតុ, ការទទួលបានមូលនិធិអាកាសធាតុ និងទេសចរណ៍

Figure 1: Risk of climate-related impacts results from the interaction of climate related hazards (including hazardous events and trends) with the vulnerability and exposure of human and nature systems. Changes in both the climate system (left) and socioeconomic processes including adaptation and mitigation (right) are drivers of hazards, exposure, and vulnerability (IPCC, 2012).

A. និទាករអាកាសធាតុតំបន់អាស៊ីអាគ្នេយ៍

CID	FUTURE CHANGES	TREND
HEAT AND COLD		
Mean surface temperature	^ High confidence of increase	Upward trend without attribution
Extreme heat	^ High confidence of increase	Upward trend with high confidence of attribution
Cold spell	V High confidence of decrease	Downward trend with high confidence of attribution
WET AND DRY		
Mean precipitation	^ Medium confidence of increase	-
River flood	^ Medium confidence of increase	-
Heavy precipitation and pluvial flood	^ High confidence of increase	Upward trend without attribution
Mean precipitation	^ Medium confidence of increase	-
WIND		
Tropical cyclone	^ Medium confidence of increase	Upward trend without attribution
COASTAL		
Relative sea level	^ High confidence of increase	Upward trend without attribution
Coastal flood	^ High confidence of increase	-
Coastal erosion	^ High confidence of increase	-
Marine heatwave	^ High confidence of increase	Upward trend without attribution
Ocean acidity	^ High confidence of increase	-
OTHERS		
Atmospheric CO2 at surface	^ High confidence of increase	Upward trend without attribution

B. ហានិភ័យអាកាសធាតុ និងភាពងាយរងគ្រោះ៖

- ប្រទេសកម្ពុជាត្រូវបានគេស្គាល់ថាជាប្រទេសមួយក្នុងចំណោមប្រទេសដែលងាយរងគ្រោះបំផុត (មានហានិភ័យខ្ពស់) ចំពោះការប្រែប្រួលអាកាសធាតុដោយសន្ទស្សន៍ហានិភ័យអាកាសធាតុសកល (១៩កន្លែងដោយផ្អែកលើទិន្នន័យឆ្នាំ១៩៩៨-២០១៧) ។
- ប្រទេសកម្ពុជាស្ថិតនៅចំណាត់ថ្នាក់ទី១៧ដូចក្នុងសន្ទស្សន៍គ្រោះថ្នាក់ពិភពលោក (ផ្អែកតាមទិន្នន័យឆ្នាំ២០១៩) ដែលផ្អែកលើគំរូមួយសម្រាប់គណនាហានិភ័យនៃគ្រោះមហន្តរាយដែលកើតឡើងដោយផ្ទាល់ពីការរញ្ជួយដីស៊ីក្លូនទឹកជំនន់គ្រោះរាំងស្ងួតឬការកើនឡើងកម្រិតសមុទ្រ ។
- ការព្យាករណ៍អាកាសធាតុបានបង្ហាញថា សីតុណ្ហភាពទូទាំងប្រទេសនឹងកើនឡើង ០,៧-២,៧ ០C ២០៦០ និង ១,៤-៤,០C ២០៩០ ។
- ទោះបីជានិន្នាការនិងលំនាំភ្លៀងធ្លាក់មិនច្បាស់និងពិបាកព្យាករណ៍ក៏ដោយក៏ការកើនឡើងសរុបនៃភ្លៀងធ្លាក់ត្រូវបានរំពឹងទុកក្នុងរដូវវស្សា (GSSD, ២០១៥) ។

ហានិភ័យអាកាសធាតុ និងភាពងាយរងគ្រោះ៖

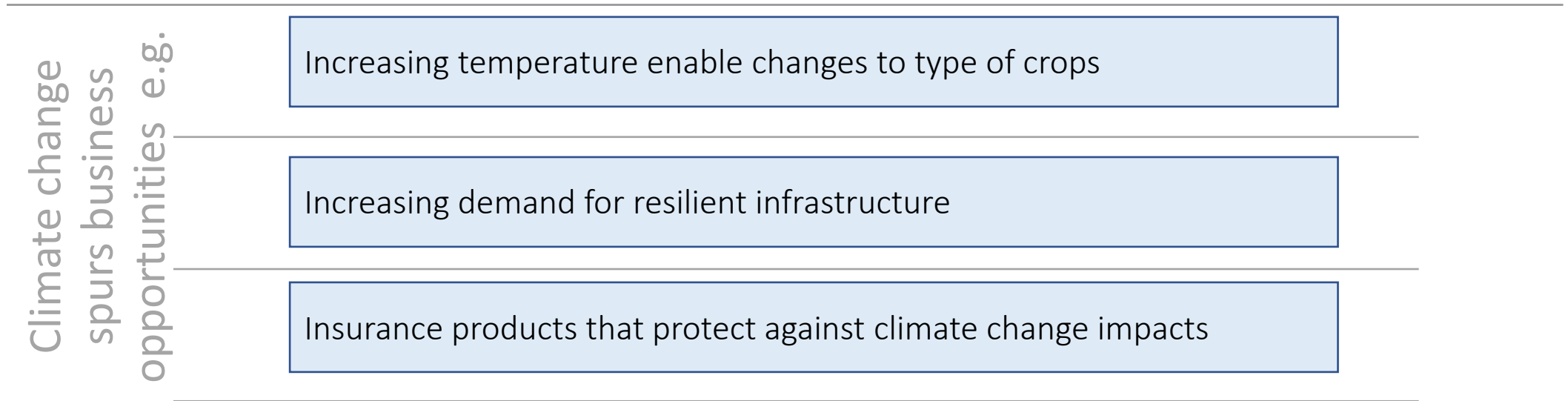
- ប្រហែល១៧,២%នៃឃុំរបស់ប្រទេសកម្ពុជា (២៧៩ ឃុំ) គឺ « ធន់ខ្លាំង » ងាយរងគ្រោះនិងជាង ៣១,៥% (៥១២ឃុំ) គឺ « ងាយរងគ្រោះខ្លាំងណាស់ » ចំពោះគ្រោះថ្នាក់អាកាសធាតុច្រើន ដូច ឆ្នាំ២០១៤ ការវាយតម្លៃភាពងាយរងគ្រោះរបស់កម្ពុជា (GSSD, 2017a) ។
- ការវាយតម្លៃភាពងាយរងគ្រោះនេះកាលពីឆ្នាំ២០១៩បានបង្ហាញថា១៦,៥%នៃឃុំរបស់ ប្រទេសកម្ពុជាគឺ « ងាយរងគ្រោះខ្លាំងណាស់ » (២៧០ឃុំ) និង ២៦% (៤២៣ឃុំ) គឺ « ងាយ រងគ្រោះខ្លាំងណាស់ » និងបានបង្ហាញពីកម្រិត៣ជាន់ (កម្រិតខេត្តកម្រិតស្រុកនិងកម្រិតឃុំ) ។
- ទោះបីជាចំណាត់ថ្នាក់កម្រិតខេត្តផ្តល់នូវទិដ្ឋភាពទូទៅនៃភាពងាយរងគ្រោះចំពោះការប្រែប្រួល អាកាសធាតុនៅកម្រិតជាតិក៏ដោយវាជាការចាំបាច់ដែលការរៀបចំផែនការសម្រាប់ការឆ្លើយតប នៃការប្រែប្រួលអាកាសធាតុគួរតែត្រូវបានធ្វើឡើងនូវភាពងាយរងគ្រោះក្នុងកម្រិតសហភាព (IIED ឆ្នាំ 2015) ។

Projections	Climate-induced events	Climate Hazards	Exposure
Variability in Rainfall (intensity and frequency) Slight increase in Annual Rainfall	<ul style="list-style-type: none"> Heavy rain Tropical storms 	<ul style="list-style-type: none"> Flooding Flash flood Soil Erosion, run-offs and sedimentation High intensity rainfall during La Nina Extended dry spell during El Nino 	<ul style="list-style-type: none"> Drought affects cropping pattern and growth and yield on bare and exposed soil Non-resilient varieties and roads and bridges Landslides, sinkholes and subsidence Low river flow for hydropower and consumption Vulnerable hydropower assets
Increase in Temperature <u>2060:</u> 0.7–2.7oC <u>2090:</u> 1.4–4.oC	<ul style="list-style-type: none"> Unusually higher temperatures 	<ul style="list-style-type: none"> Heat stress High evapo-transpiration Extended dry spell events Low water use efficiency Heat islands in urban areas Low soil biodiversity > low soil resilience 	<ul style="list-style-type: none"> Lower agricultural yield and productivity affecting food and water security and local economy Mal-adapted agricultural practices Exposed unprotected bare soil vulnerable to run off and erosion Soil degradation/ erosion Invasive species New pest, vectors and diseases (dengue, malaria), pandemic
Sea Level Rise (SLR)	<ul style="list-style-type: none"> SLR Warming sea 	<ul style="list-style-type: none"> Storm surges on atoll Coastal erosion Loss of marine habitats Coral bleaching, Salinity, Sedimentation 	<ul style="list-style-type: none"> Economic and livelihood loss and damage on communities, tourism assets, housing Relocation

Climate-Related Risks, Opportunities, and Financial Impact



- Climate change: opportunities for the private sector

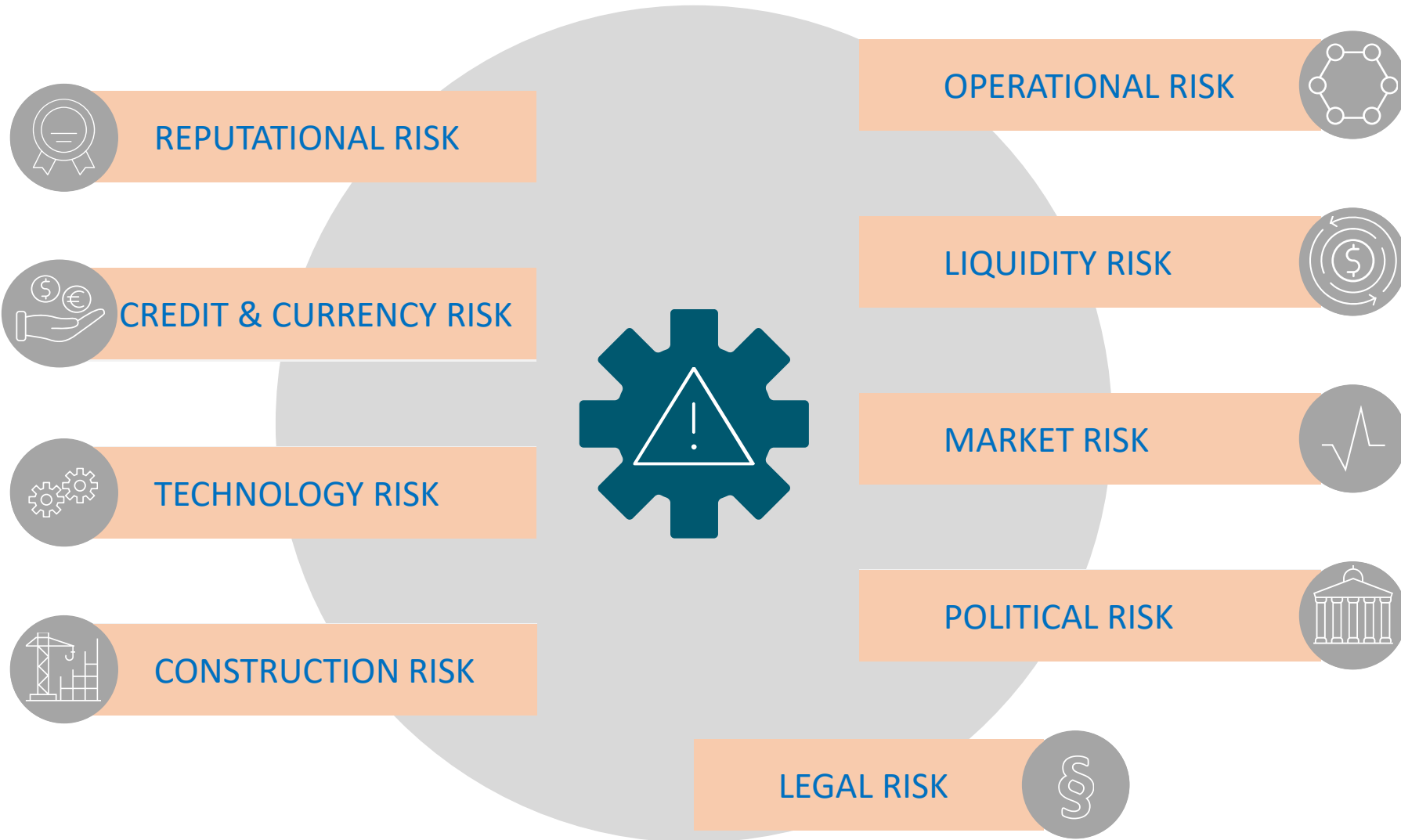


Climate change interventions can reduce costs; e.g.

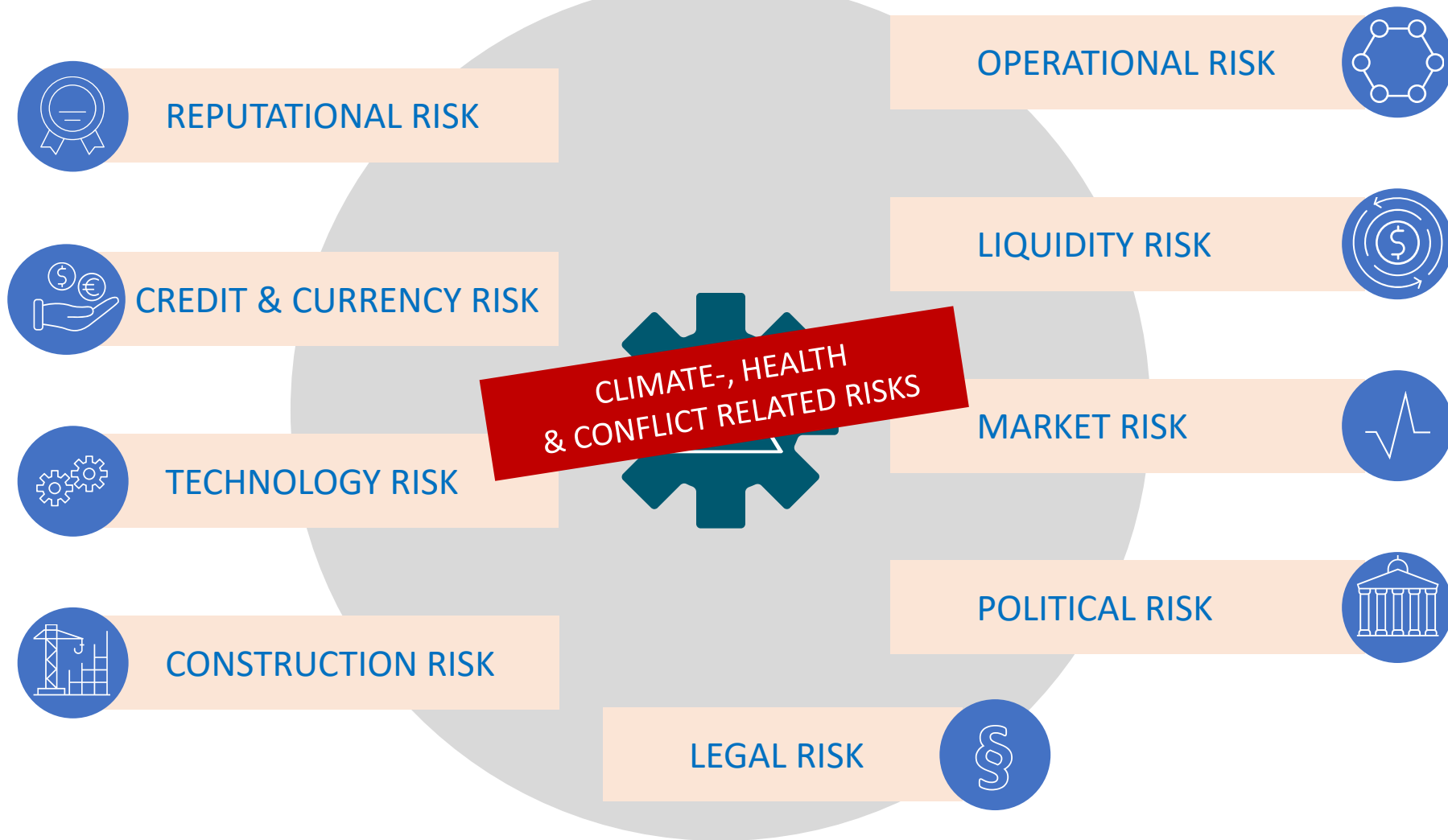


- Energy and water efficiency measures
- RE production cost now often lower than fossil fuel
- Reduced interruption of the value chain
- Shifting to off peak production and manufacturing (cheaper electricity)

- Types of risks in a “business as usual” context



- Climate-, pandemic- and conflict-related risks exacerbate BAU risks



HOW resilient is your food, water, energy and financial security eco-systems?

Time ==>

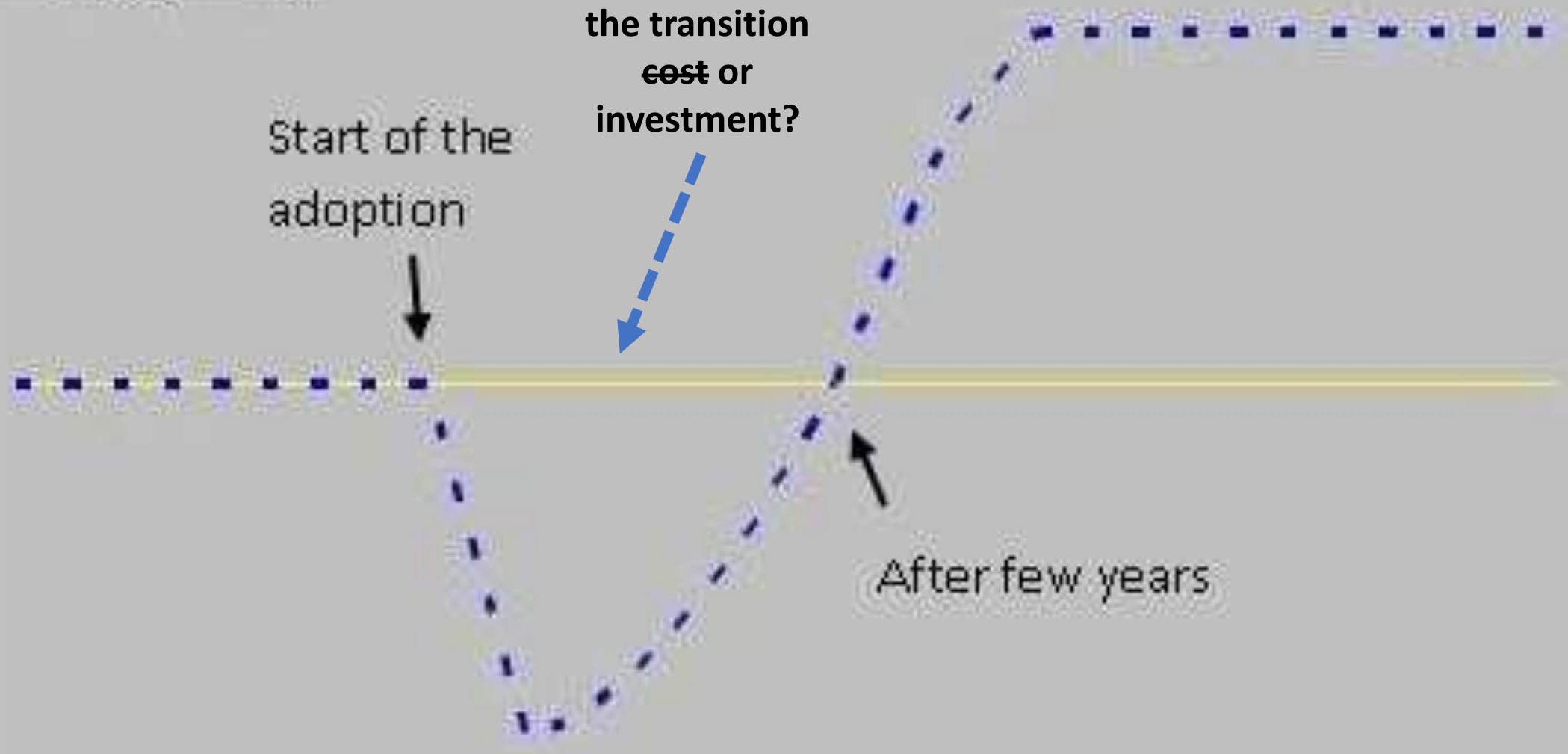
Who will bear
the transition
cost or
investment?

Start of the
adoption

After few years

Baseline net income

Current net income



2

តើត្រូវកាត់បន្ថយហានិភ័យ
ដូចម្តេច ?

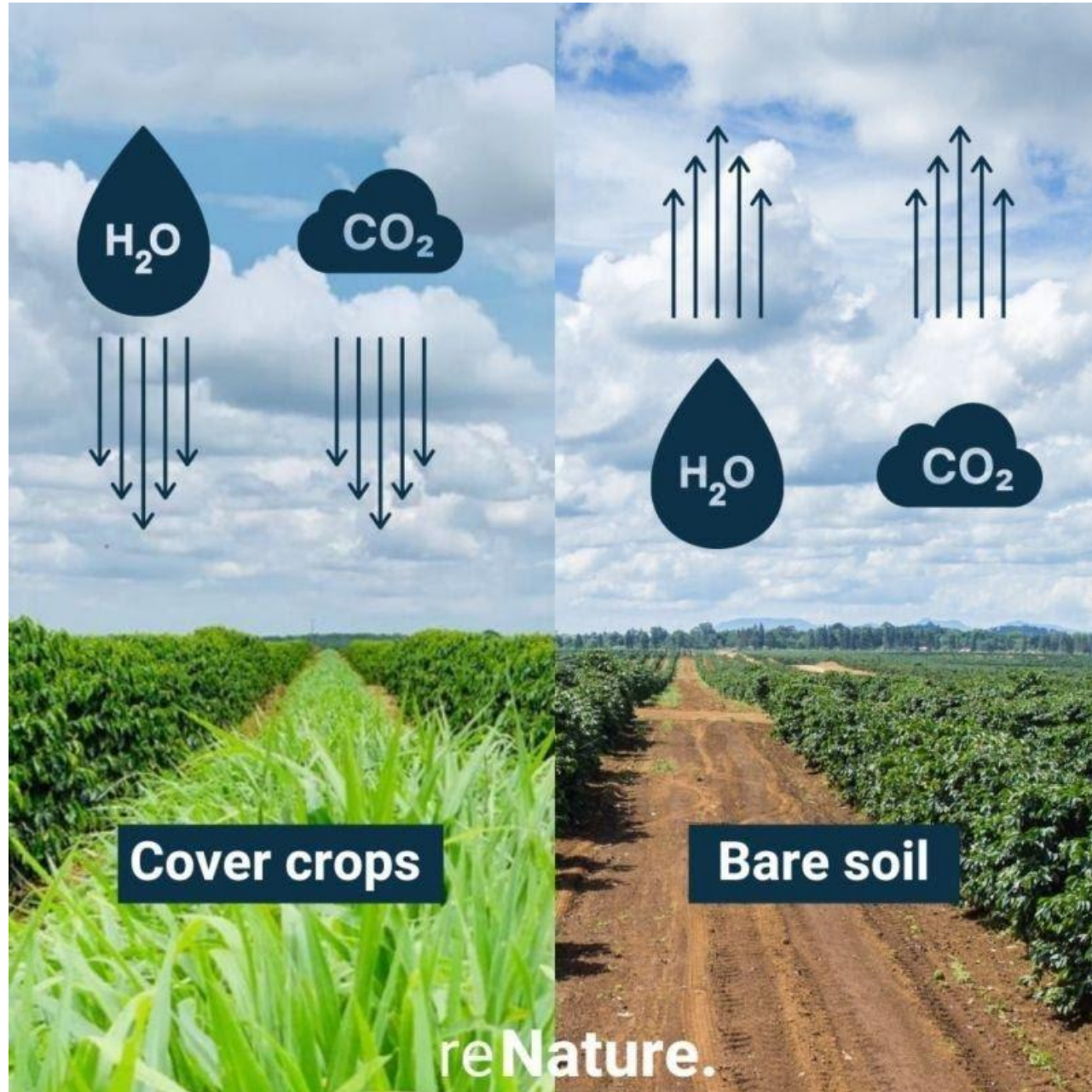
How to reduce the
exposure to climate risks?





In other words, it is used for agricultural purposes that occur annually.

The Curse of Bare soil

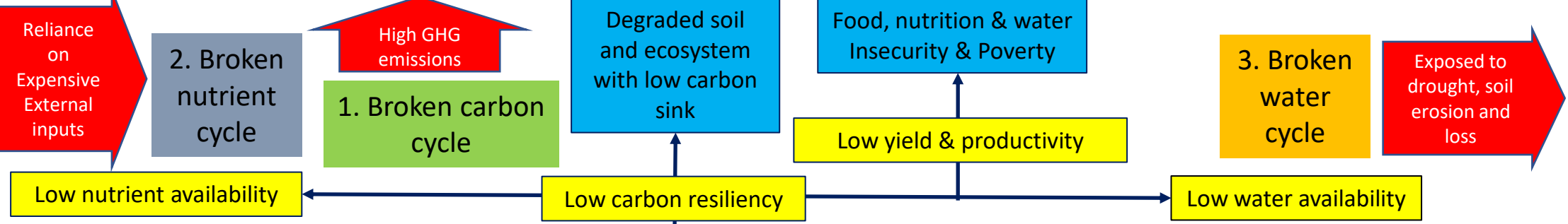


**មូលហេតុនៃ
កសិកម្មបណ្តាំ និងដំណោះស្រាយ**

Root causes of mal-adapted
farming practices and their
solutions

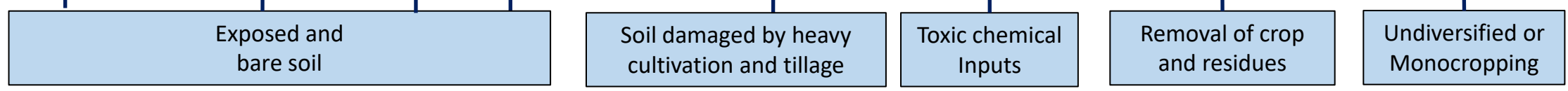
Climate Regenerative Agriculture

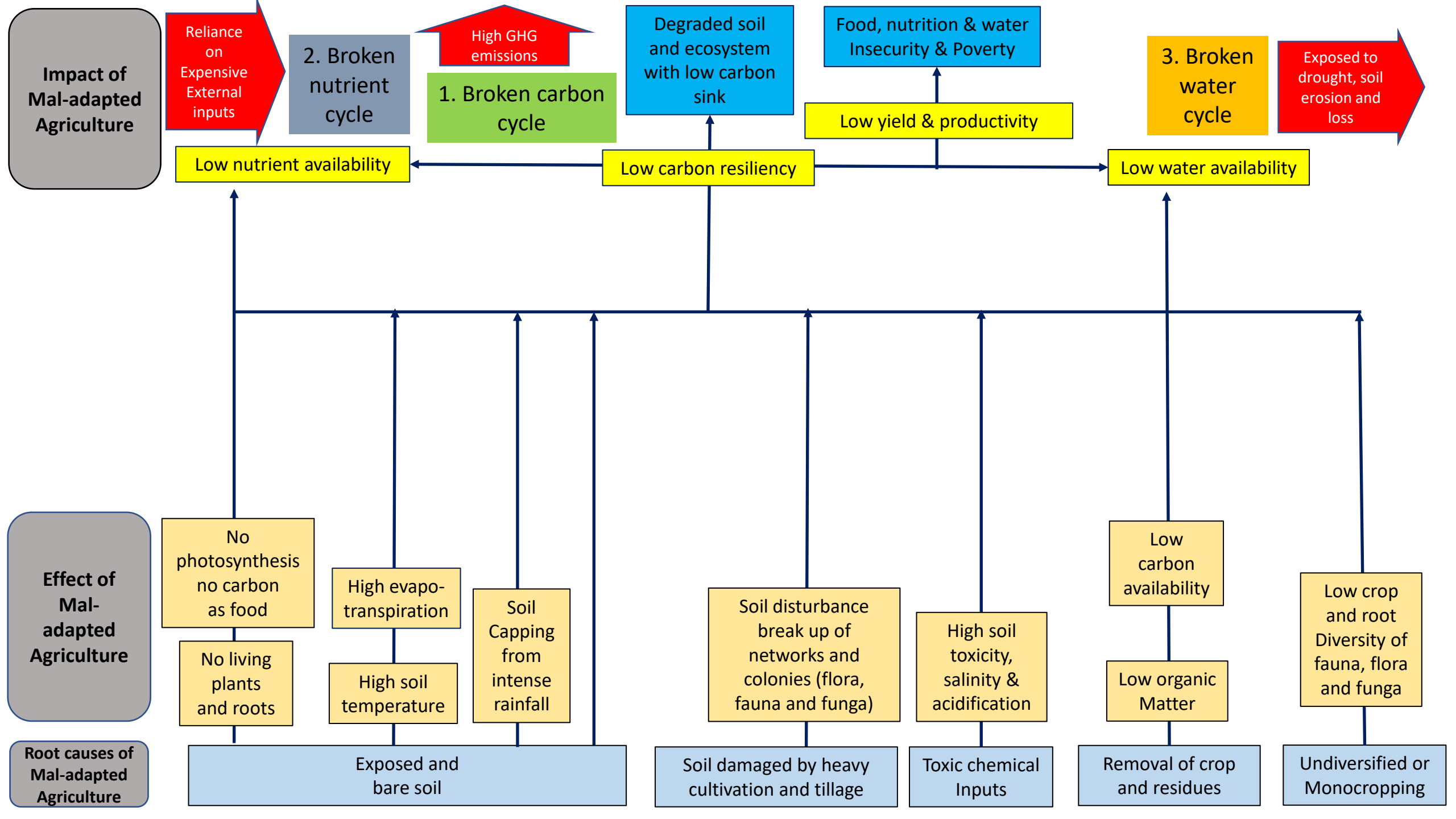
Impact of Mal-adapted Agriculture

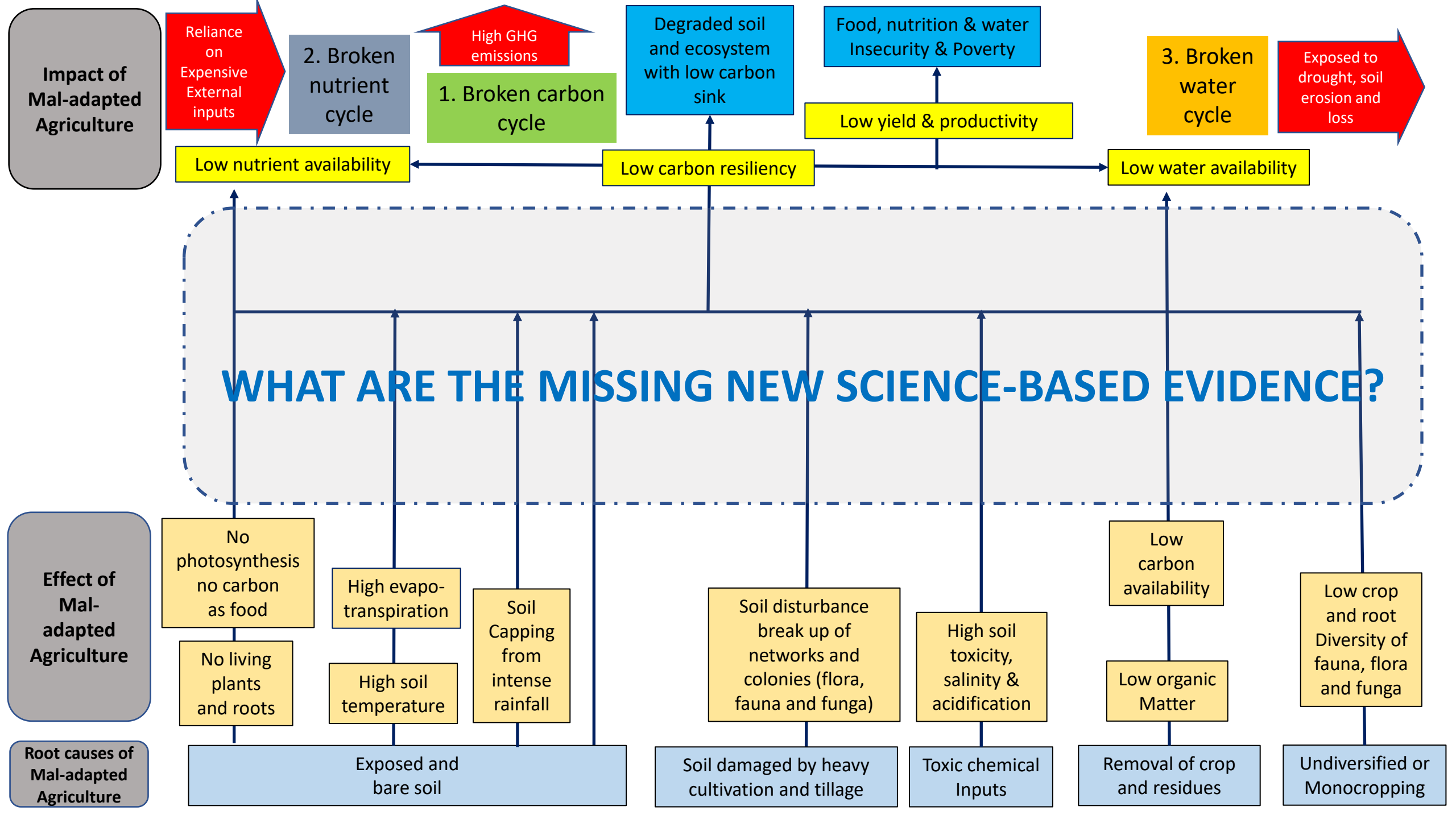


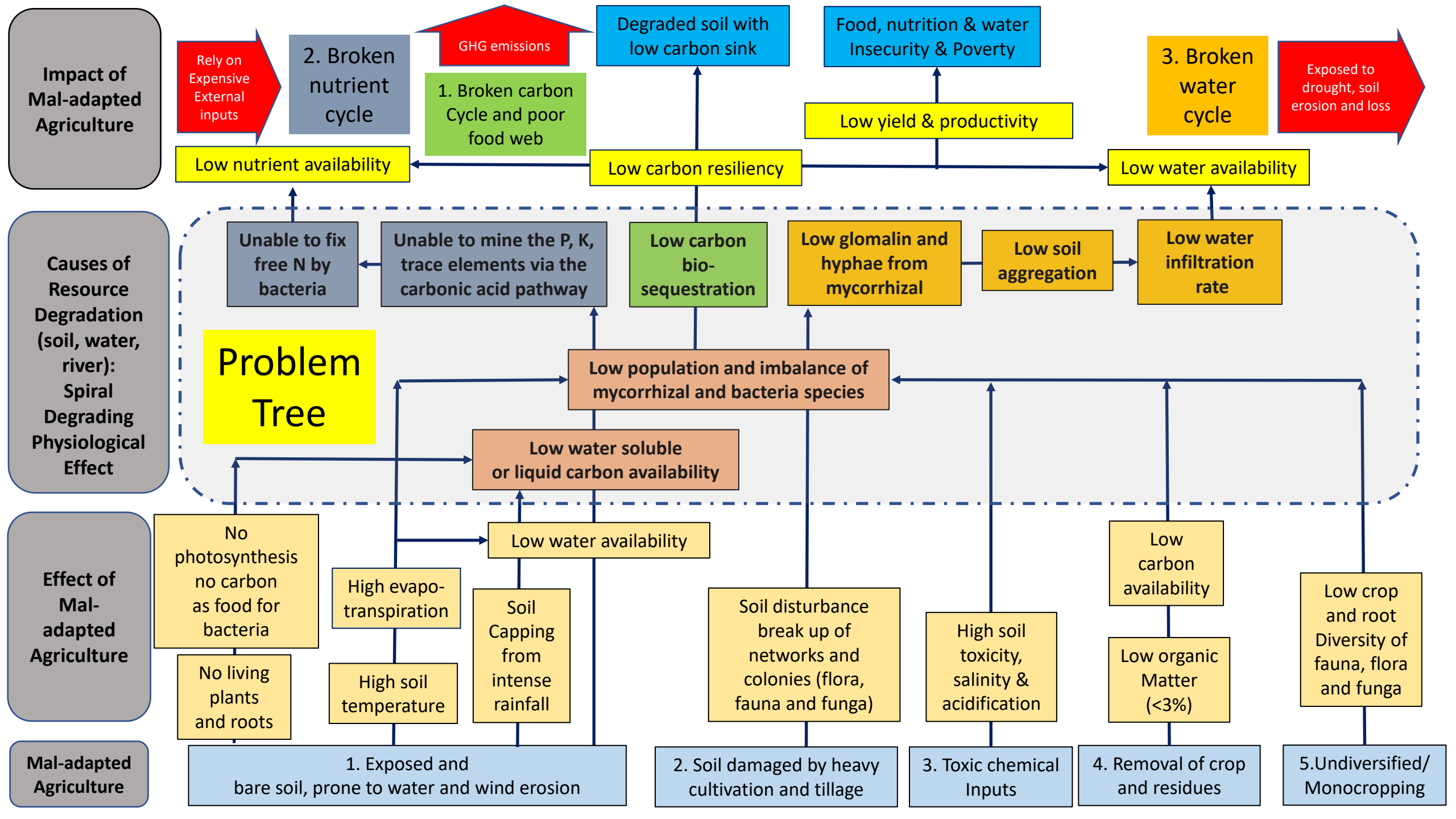
TACKLING THE ROOT CAUSES AND NOT THE TREATING THE SYMPTOMS

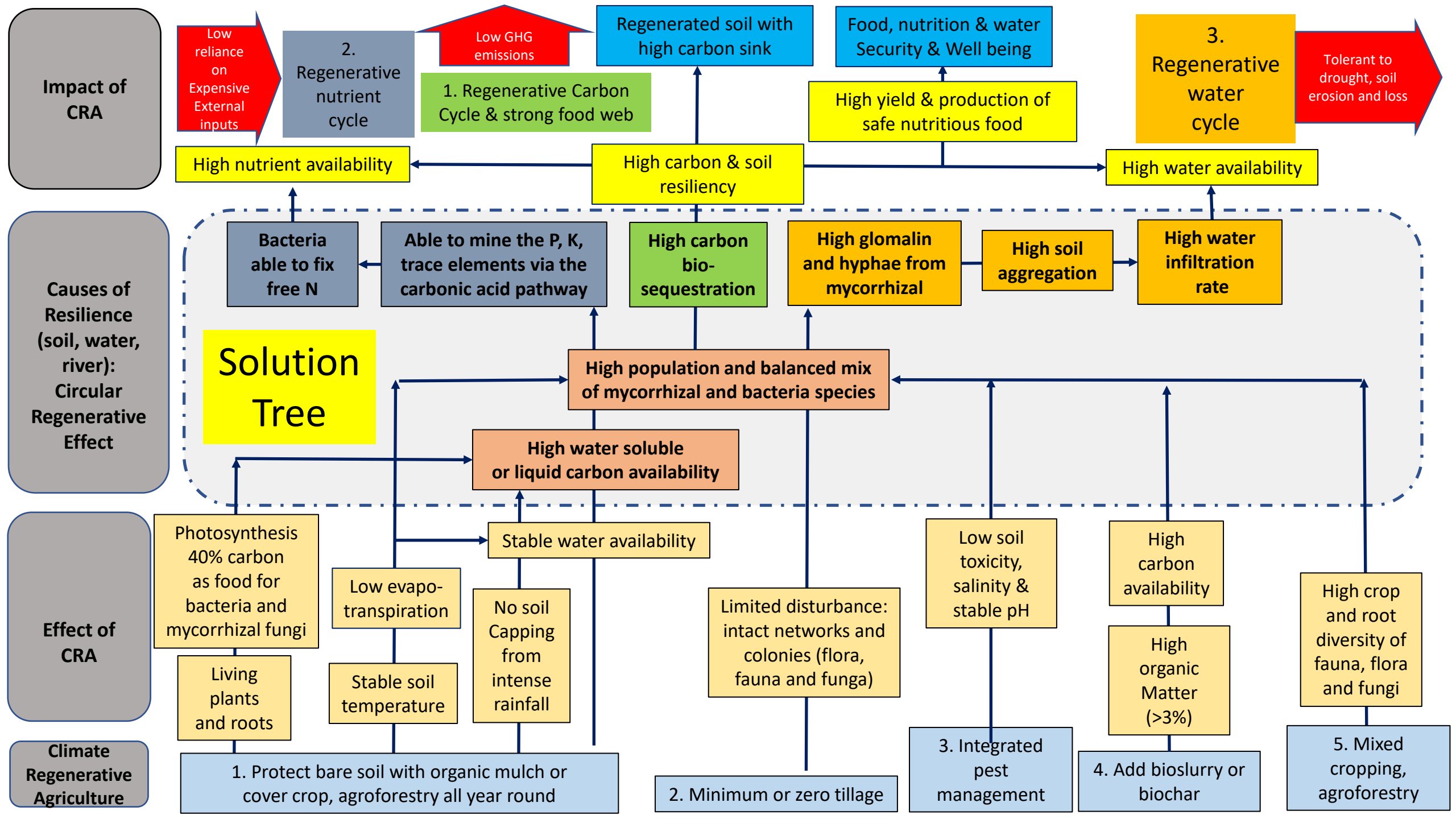
Root causes of Mal-adapted Agriculture











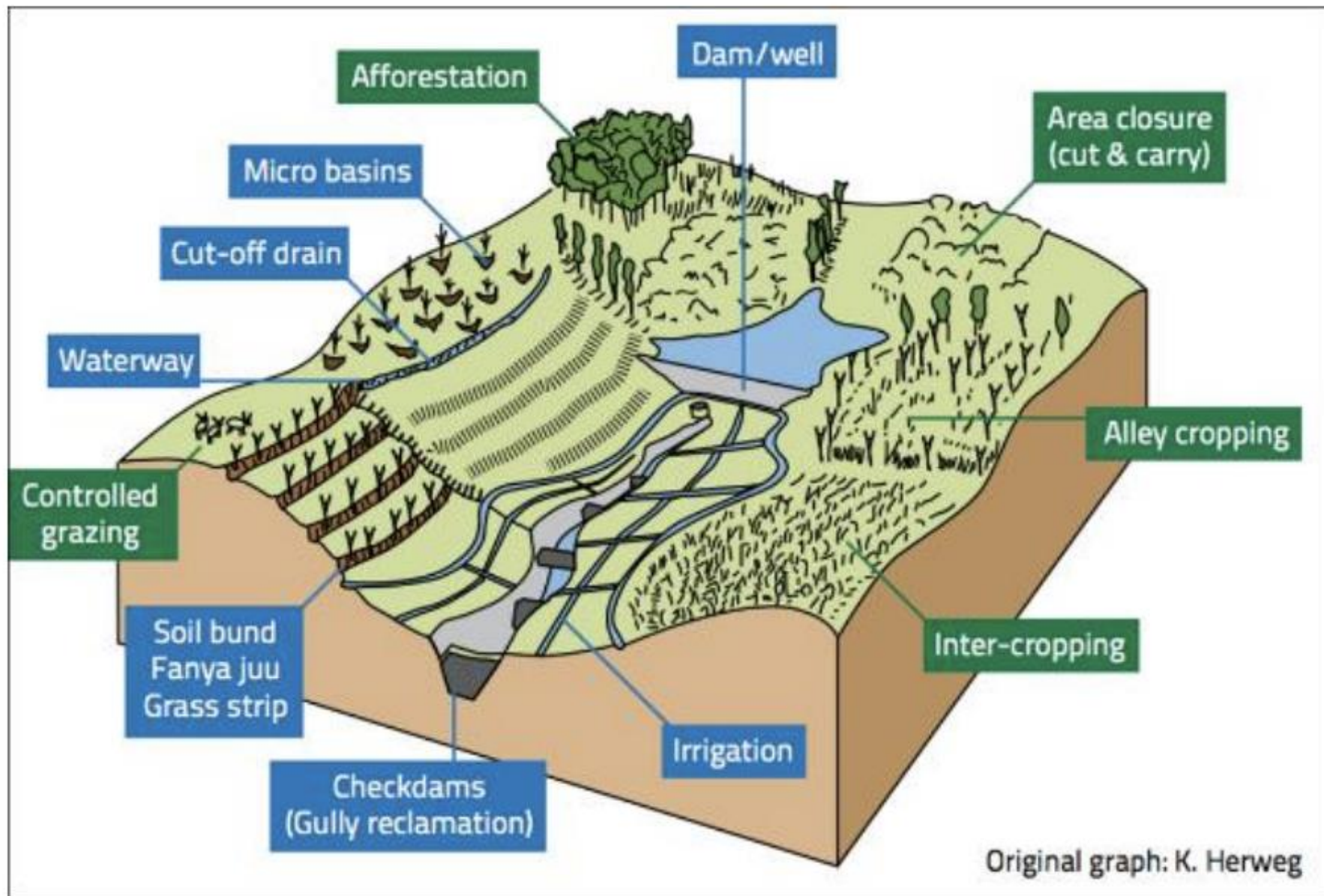


FIGURE 22: Watershed management approaches consider potential interrelationships and combined effects of different policies and practices

Source: FAO, 2014c





TABLE 14: Comparison between traditional and recommended management practices in relation to soil organic carbon sequestration

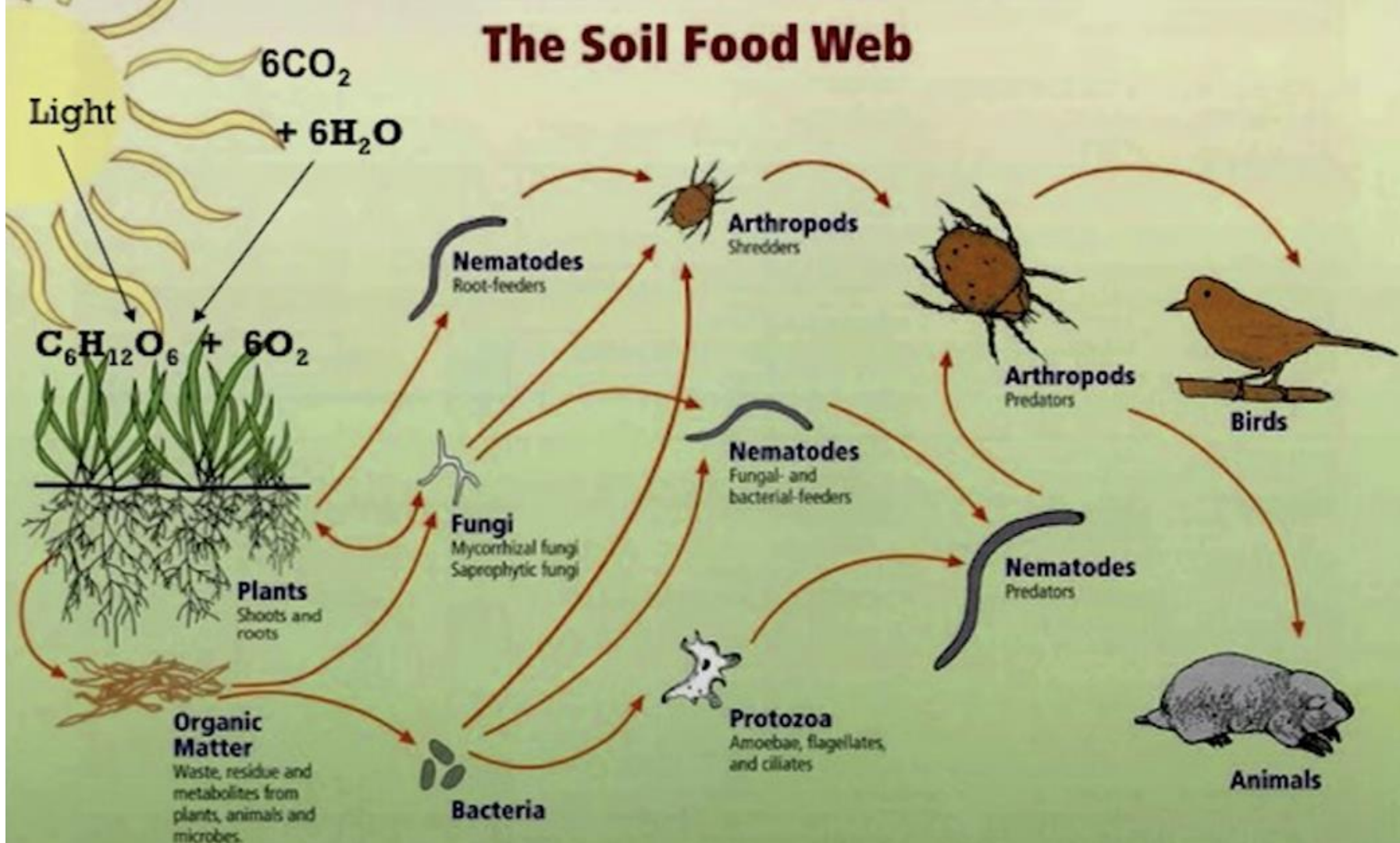
Traditional methods	Recommended management practices
1. Biomass burning and residue removal	1. Residue returned as surface mulch
2. Conventional tillage and clean cultivation	2. Conservation tillage, no till and mulch farming
3. Bare/idle fallow	3. Growing cover crops during the off-season
4. Continuous monoculture	4. Crop rotations with high diversity
5. Low input subsistence farming and soil fertility mining	5. Judicious use of off-farm inputs
6. Intensive use of chemical fertilizers	6. Integrated nutrient management with compost, biosolids and nutrient cycling, precision farming
7. Intensive cropping	7. Integrating trees and livestock with crop production
8. Surface flood irrigation	8. Modernized irrigation
9. Indiscriminate use of pesticides	9. Integrated pest management
10. Cultivating marginal soils	10. Conservation reserve programme, restoration of degraded soils through land use change

Soil Food Web

Heidelberg Farms



The Soil Food Web



First trophic level:
Photosynthesizers

Second trophic level:
Decomposers
Mutualists
Pathogens, parasites
Root-feeders

Third trophic level:
Shredders
Predators
Grazers

Fourth trophic level:
Higher level predators

Fifth and higher trophic levels:
Higher level predators

Root of the Problem is the Problem of the Root

Build a Living Soil



Pueraria jamaicensis (P)



Calligonum macrocarpum (S)



Calligonum pubescens (S)



Calligonum americanum (S)



Miconia Antioquiensis (S)



WEED FREE MARKET GARDENING (Our no dig approach)



WEED FREE MARKET GARDENING (Our no dig approach)



Play (k)

WEED FREE MARKET GARDENING (Our no dig approach)



Play (k)

WEED FREE MARKET GARDENING (Our no dig approach)



Play (k)

WEED FREE MARKET GARDENING (Our no dig approach)



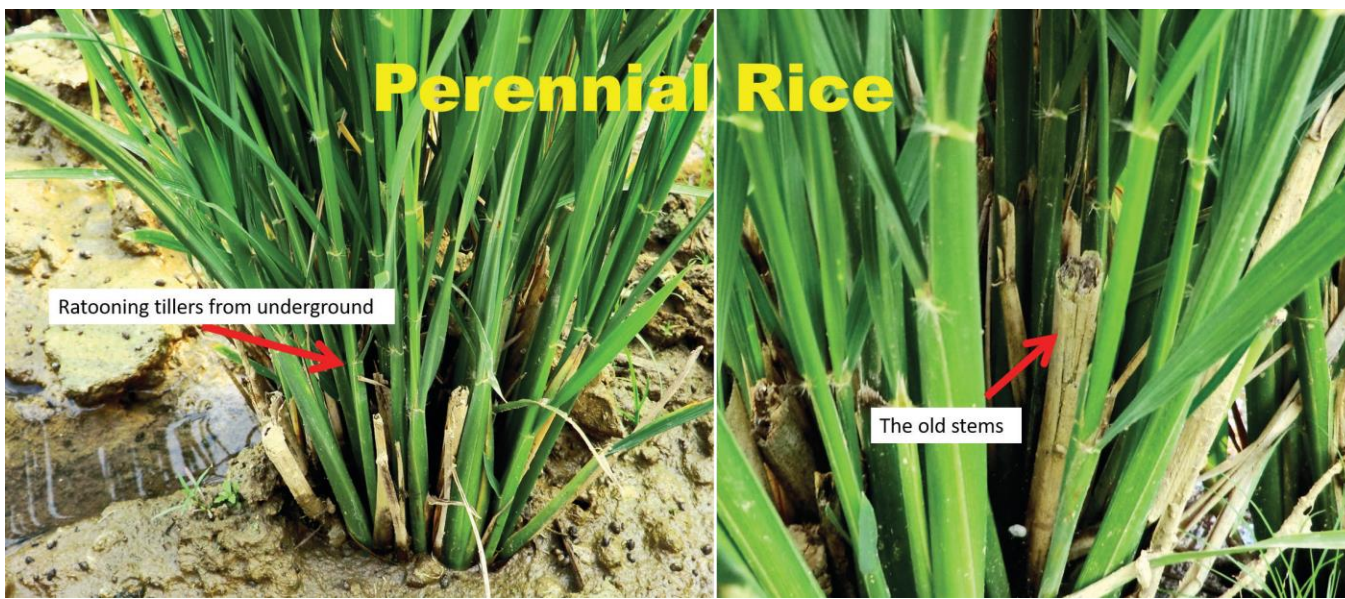
Play (k)











O. longistaminata



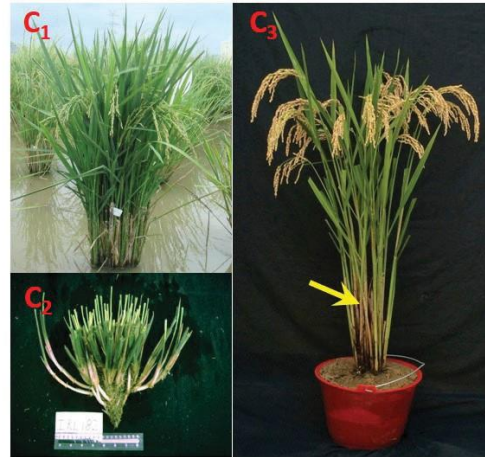
+

Annual rice

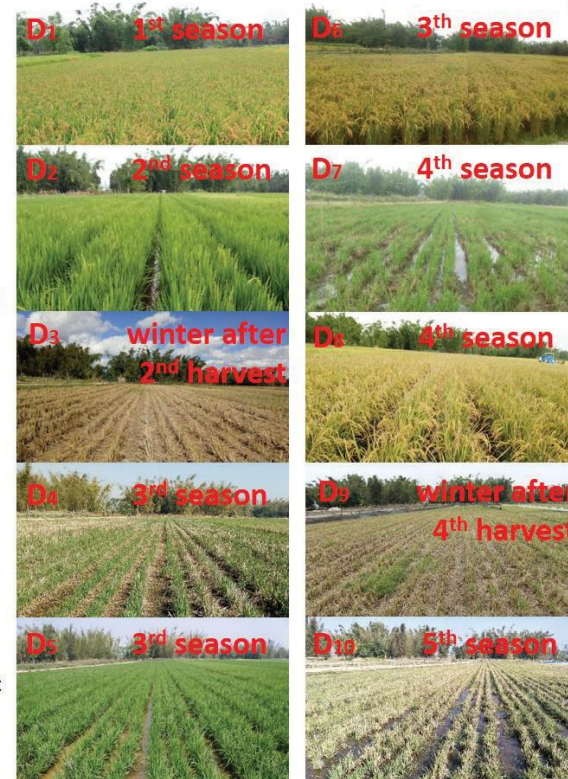


=

Perennial rice



→



A: *Oryza longistaminata* with strong rhizomes

B: Annual rice (cultivated rice) without the perennial ability

C: Perennial rice (C1: the ideal perennial rice model, C2: the strong perennial ability due to the short rhizomes; C3: good perennial rice selection with the old stem)

D: The performances of perennial rice line PR23 in Mengzhe (D1: the maturation stage in 1st season. D2: heading stage in 2nd season. D3: Winter after 2nd harvest. D4-D6: the 3rd season. D7-D8: the 4th season. D9: Winter after 4th harvest. D10: new start for 5th season)



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www.nxy.ynu.edu.cn/info/1054/1152.htm | Tel: 008613187862534
 Correspondance: hfengyi@ynu.edu.cn



A: PR23, the tilling stage of 3rd season, April 2017
 B: PR24, the start tilling stage of 3rd season, Feb 2018
 C: PR25, the start tilling stage of 2nd season, Feb 2018
 D: The performances of perennial rice line PR107 in Jinghong (D1: the maturation stage in 2nd season. 12 days before harvest, D2: regrowth of the stems, 3 days after harvest)

3

តើគ្រូឆ្កែ និងថែលរំលែកហានិភ័យដូចម្តេច

How to transfer and share the risks?

ធានារ៉ាប់រងដំណាំ

Crop Insurance

វិកាយបត្រឃ្នាំ

Warehouse Receipts

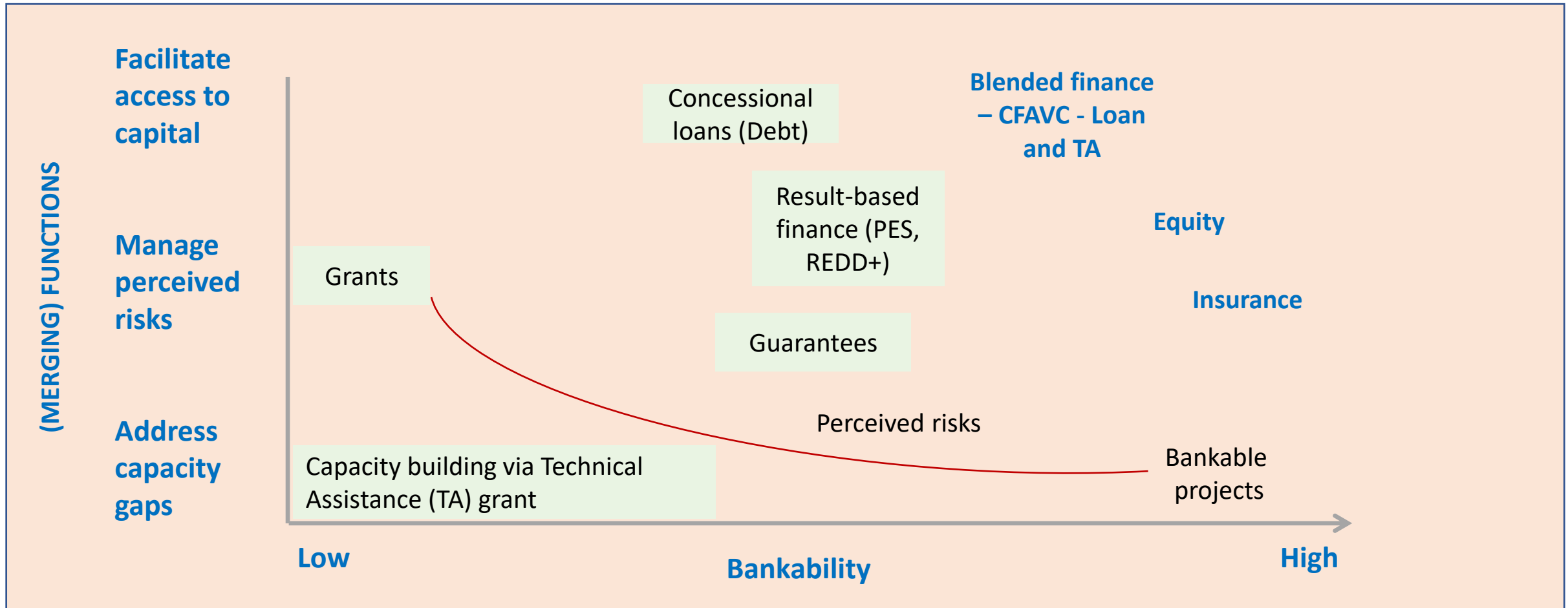


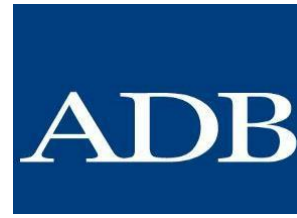
3.1

ការធានារ៉ាប់រងដំណាំ
Crop Insurance

• Financial de-risking instruments

Categorising and summarizing major risks and exemplary instruments to respond:





WEATHER INDEX CROP INSURANCE (WICI)

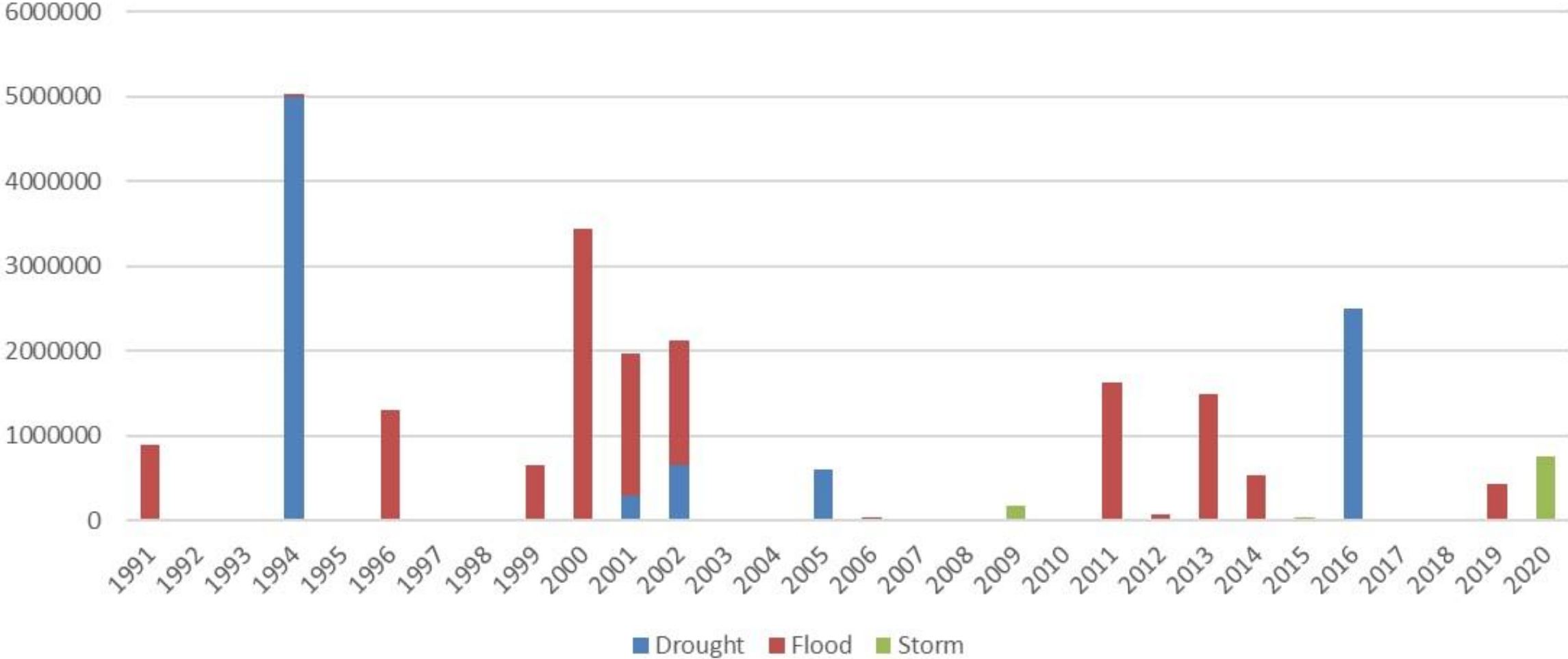


Why Agri. Insurance for Cambodian Farmers

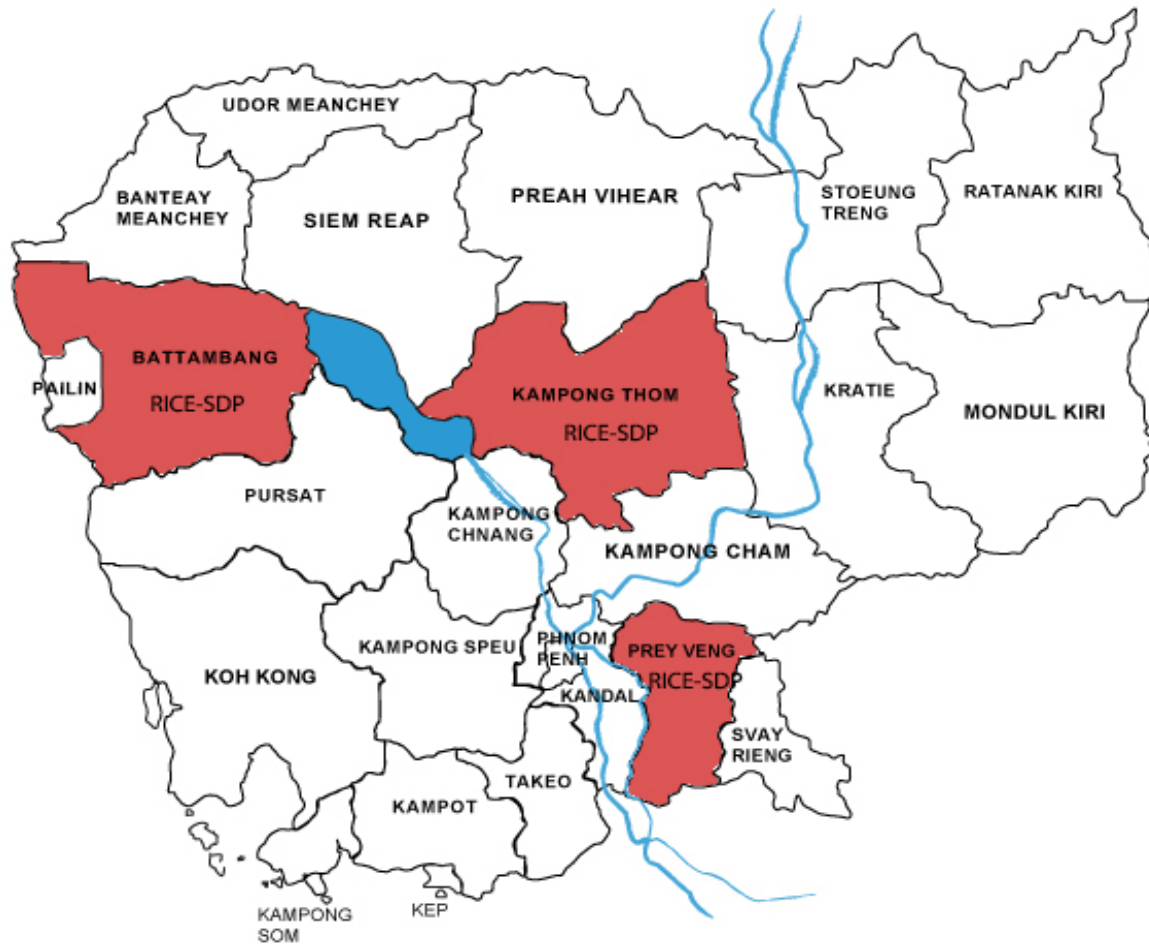


- ❑ Most agricultural production is climate-based.
- ❑ Due to climate change, farmers are vulnerable due to uncontrollable climate risks.
- ❑ Despite the “good” year of cultivation, the threat of climate change has made some agricultural investors reluctant to invest or borrow more from financial institutions to expand their agricultural production.
- ❑ Threats from climate risks can cause farmers to lose money for their rice production.

Natural Disasters in Cambodia (30 Years)



Weather-Index Crop Insurance | WICI Target Areas



Target Districts

1 PREY VENG

Kampong Trabeak

Sithor Kandal

Preah Sdach

Svay Antor

2 BATTAMBANG

Bavel

Rukhak Kiri

Moung Russey

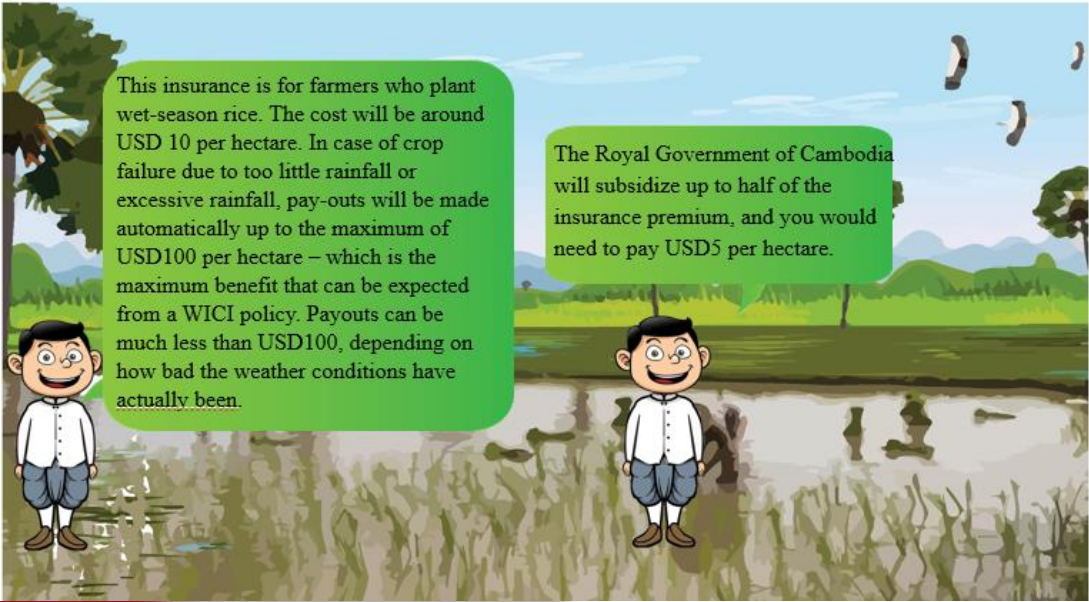
3 KAMPONG THOM

Baray

Tangkork

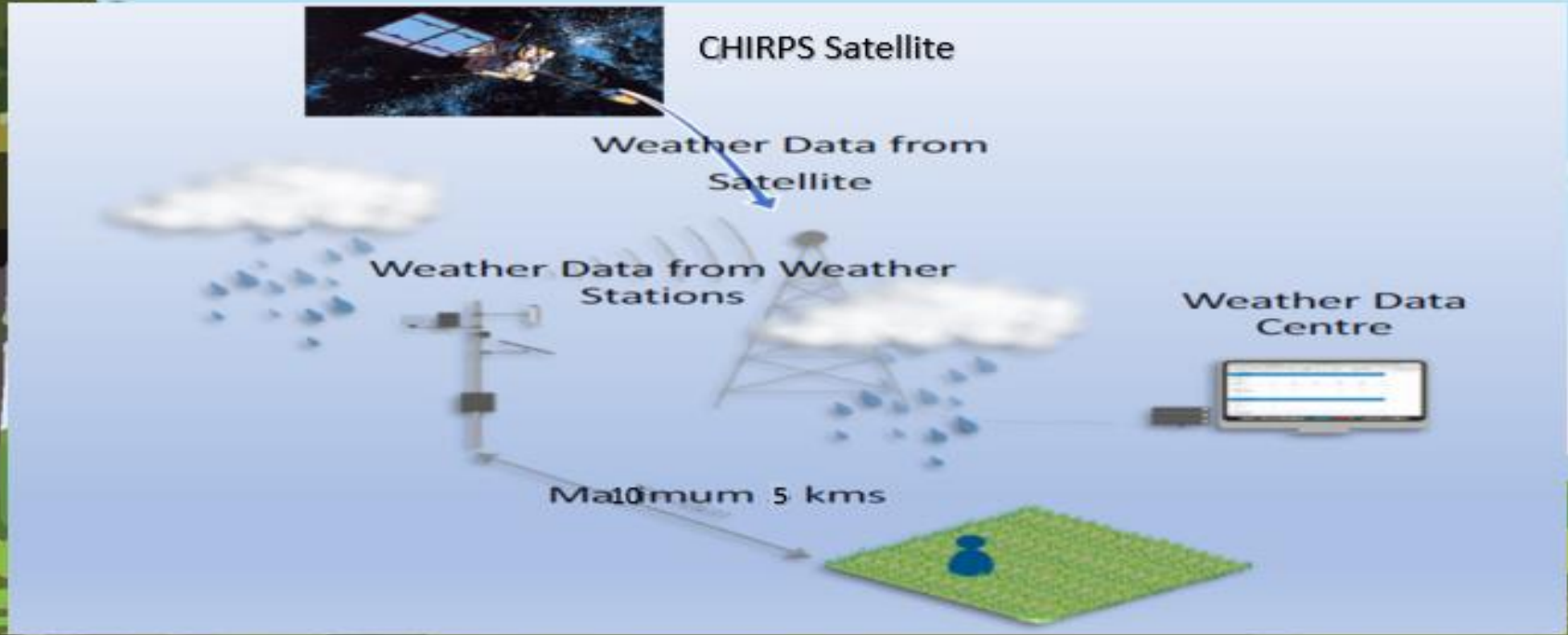
Santuk

General conditions of WICI project



- This insurance is designed for farmers in the target provinces
- The Royal Government has started this pilot insurance in order to provide support to farmers to work in agriculture with confidence and sustainability through crop insurance project.
- Maximum compensation up to USD 100 = 400,000 Riel per hectare.
- Insurance premium (price) USD 10 = 40,000 Riel per hectare.
- Farmers have to pay insurance fee only USD 5 = 20,000 Riel per hectare (because the Royal Government of Cambodia has provided 50% is equal to USD 5).
- Compensation is based on rainfall data from rain gauges and satellites for each target village.

Sources of Rainfall Index



	<u>Farm land</u> is within 5 km of a Weather Station	<u>Farm land</u> is more than 5 km from a Weather Station
Basis for claim pay-out using rainfall data from	Weather stations (MOWRAM)	Satellite Estimation (CHIRPS)
Data Collection	Regularly	Regularly

Insurance Periods and Options

Option	Date of Planting	Insurance Start Date	Insurance End Date
A	Before 1 May	1 May	31 Aug
B	1 to 31 May	1 Jun	30 Sep
C	1 to 30 Jun	1 Jul	31 Oct
D	Before 1 May	1 May	31 Oct

You need to pay premium before the insurance start date of each Option (A-D). The insurance cover will end on the 'end dates' mentioned here or when the maximum pay-out of USD 100 per hectare has been made.

The cover is for too little rainfall or too much rainfall. It is divided in two phases of cover, which are:

Option	Insurance Period	Phase 1	Phase 2
A	1 May to 31 Aug	1 May- 30 June	1 July- 31 Aug
B	1 Jun to 30 Sep	1 June- 31 July	1 Aug- 30 Sep
C	1 Jul to 31 Oct	1 July- 31 Aug	1 Sep- 31 Oct
D	1 May to 31 Oct	1 May- 31 July	1 Aug- 31 Oct



Phases of Covers

The features of dry spell and excessive rainfall cover are summarized below:

Phase	Feature	Description
1	Early dry spell	In Phase 1 of the insurance cover, if the total rainfall over any 30 consecutive days is very low (e.g. below the trigger level), then there is a payout, which starts from USD 5 and increases to USD 30 (per hectare), depending on how low the rainfall has been below the trigger level.
2	Late Dry Spell	In Phase 2 of the insurance cover, if the total rainfall over any 30 consecutive days is very low (e.g. below the trigger level), then there is a payout, which starts from USD 5 and increases to USD 50 (per hectare), depending on how low the rainfall has been below the trigger level.
	Excessive Rainfall	In Phase 2 of the insurance cover, if the total rainfall over any 7 consecutive days is very high (e.g. above the trigger level), then there is a payout, which starts from USD 5 and increases to USD 50 (per hectare), depending on how high the rainfall has been above the trigger level.

Early Season Dry Spell (Example – Structure A)

Period of 30 Consecutive days	Accumulated Rainfall (mm)	Trigger (mm)	Payment rate (%)
01 May – 30 May	65.5	60	0.5
02 May – 31 May	64.9		
03 May – 01 June	55.6		
04 May – 02 June	42.8		
05 May – 03 June	30		
.....			
31 May – 29 June	56		
01 June – 30 June	61.8		

Payout = (60 – 30) x 0.5% x 100 = USD 15

Late Season Dry Spell (Example – Structure A)

Period of 30 Consecutive days	Accumulated Rainfall (mm)	Trigger (mm)	Payment rate (%)
02 June – 01 July	65.5	50	1
03 June – 02 July	64.9		
04 June – 03 July	55.6		
05 June – 04 July	42.8		
06 June – 05 July	30		
.....			
01 Aug – 30 Aug	20		
02 Aug – 31 Aug	23.7		

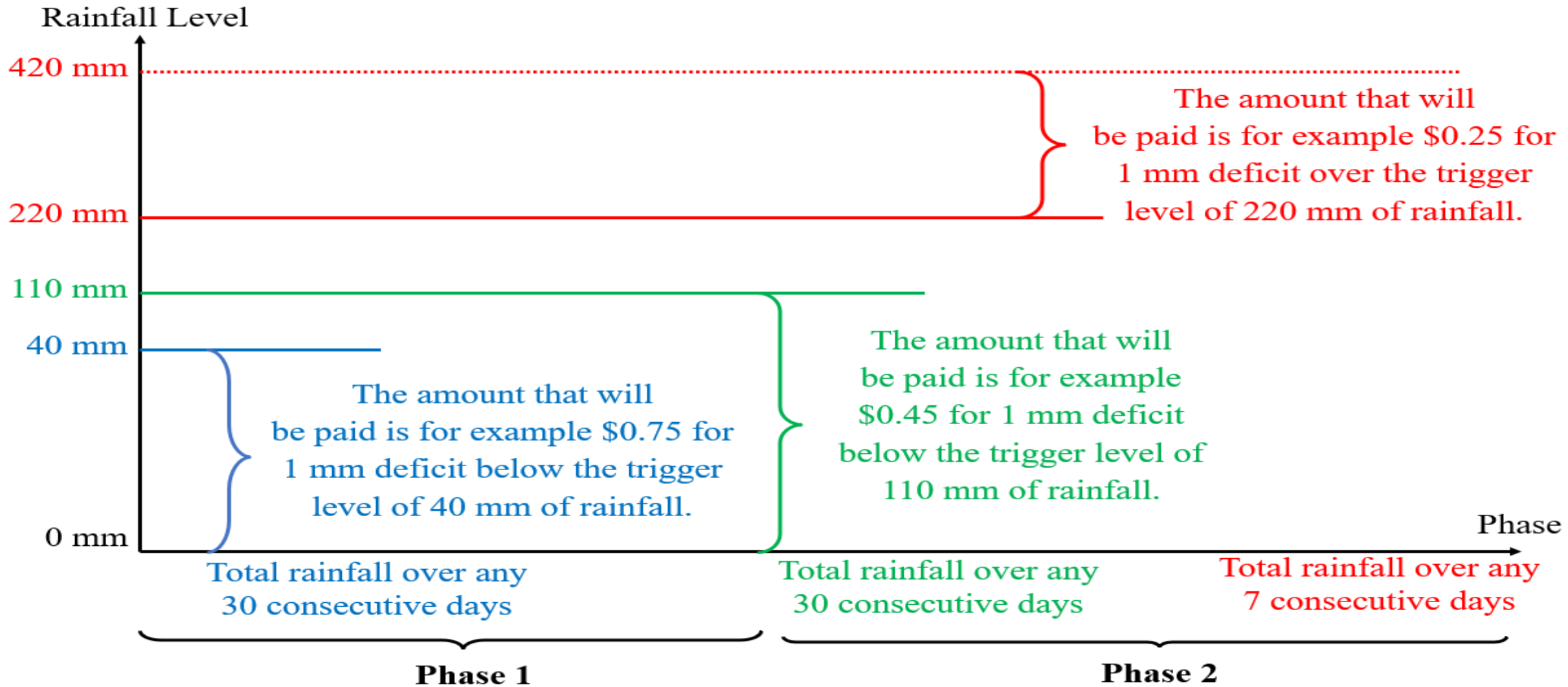
Payout = (50 – 20) x 1% x 100 = USD 30

Excessive Rainfall (Example – Structure A - ...village)

Period of 7 Consecutive days	Accumulated Rainfall (mm)	Trigger (mm)	Payment rate (%)
01 July – 07 July	188	250	0.25
02 June – 08 July	178.5		
03 June – 09 July	200		
04 June – 10 July	240		
05 June – 11 July	300		
.....			
24 Aug – 30 Aug	298.5		
25 Aug – 31 Aug	280.7		

$$\text{Payout} = (300 - 250) \times 0.25\% \times 100 = \text{USD } 12.5$$

Product parameters (Ex.)



Weather-Index Crop Insurance (WICI) | General Characteristics

1

The insurance is designed and sold to farmers in the targeted provinces only and in selected villages.

The targeted land rice 120,000 ha

2

US\$ 10

Premium Amount

3

US\$ 100

Maximum Payout Per Hectare

4

WICI Scheme (Public-Private Partnership) is designed to protect rice farmers against crop losses from drought and flood.

5

Each farmer / client pays only **US\$ 5** per hectare because the remaining 50% is paid by the government under Rice-SDP, ADB's Grant 0350-CAM

6

Payouts are calculated based on sets of rainfall data generated from weather stations and downloaded from the CHIRPS website for each target village.

Sales Process



Awareness

- Training (field staff at village, commune, district, and provincial level)
- Distribute promotional materials, such as books, leaflets, etc.



Premiums Registration

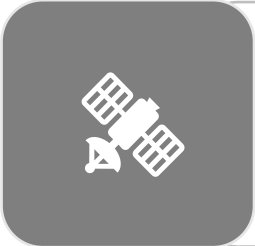
- Provide information with full name, phone number, location, and insured address
- Present identification card
- Collect premium from the customers



Farmer receives the insurance certificate

- Insurance Agreement between insurer and farmer.

Claims Payment Process



Data and Payout Calculation

- Use rainfall satellite and weather station data
- Calculate payouts based on village level
- Payouts are made through MFI



“Payout” SMS to Customers

- Customer receives SMS with code from MFI
- Receive payout at MFI’s counters in different branches



Receiving Payouts

- With the code and phone number, the customer can receive the payouts at MFI’s counters/branches

Insurance Certificate



**ហ្វតេ អ៊ុនស៊ុរ៉ង់ស៍ (ខេមបូឌា)
Forte Insurance (Cambodia) Plc.**

Vattanac Capital, Level 18, No. 66, Preah Monivong Blvd., Sangkat Wat Phnom,
Khan Daun Penh, Phnom Penh City, Kingdom of Cambodia, P.O. Box 565
Tel : (+855) 23 885 077 / 066 | F: (+855) 23 986 922 / 882 798 | E: info@forteinsurance.com

លេខ ៖

ពាក្យស្នើសុំផលិតផលធានារ៉ាប់រងដំណាំស្រូវផ្អែកលើសន្ទស្សន៍អាកាសធាតុ

អ្នកត្រូវបានធានារ៉ាប់រងឈ្មោះ ៖ ជាអក្សរឡាតាំង..... ភេទ.....
 ថ្ងៃខែឆ្នាំកំណើត ៖ អត្តសញ្ញាណប័ណ្ណលេខ ៖.....
 អាសយដ្ឋានបច្ចុប្បន្ន ៖ ភូមិ..... ឃុំ..... ស្រុក..... ខេត្ត.....
 ទីតាំងដីស្រែនៅ ៖ ភូមិ..... ឃុំ..... ស្រុក..... ខេត្ត.....
 ទំហំផ្ទៃដីស្រែត្រូវបានធានារ៉ាប់រង ៖ ហិកតា បុព្វលាភធានារ៉ាប់រងសរុប ៖.....
 សុពលភាព ៖ ពីថ្ងៃទី..... ខែ..... ឆ្នាំ..... ដល់ថ្ងៃទី..... ខែ..... ឆ្នាំ.....
 (សំណងអតិបរមា 100 ដុល្លារ = 400,000 រៀលក្នុងមួយហិកតា)

សំគាល់ ៖

- បុព្វលាភធានារ៉ាប់រងសរុប គឺ 10 ដុល្លារ ក្នុង 1 ហិកតាក្នុងនោះថវិកាបដិភាគចូលរួមពីរាជរដ្ឋាភិបាលកម្ពុជា ក្រោមកម្មវិធីជំរុញផលិតកម្មស្រូវនិងការនាំចេញអង្ករ (Rice-SDP, ADB's Grant 0350-CAM) 50 ភាគរយ គឺស្មើនឹង 5 ដុល្លារ ដូច្នេះ កសិករត្រូវបង់តែ 5 ដុល្លារ = 20,000 រៀល សម្រាប់ទិញសេវារ៉ាប់រង(បុព្វលាភ)ក្នុងដីស្រែ 1 ហិកតា។
- ពាក្យស្នើសុំនេះមានសុពលភាព លុះត្រាតែបានធ្វើការបង់បុព្វលាភធានារ៉ាប់រងទាំងស្រុងតាមភ្នាក់ងារ អេ អឹម ខេ (AMK) រួចរាល់។ បន្ទាប់មក លោកអ្នកនឹងទទួលបានសារជាអក្សរបញ្ជាក់ថា ពាក្យស្នើសុំនេះត្រូវបានមានសុពលភាព។ ដូចនេះ អ្នកត្រូវបានធានារ៉ាប់រងត្រូវរក្សាទុកពាក្យស្នើសុំនេះ និងវិក័យប័ត្របង់បុព្វលាភអោយបានត្រឹមត្រូវ

អតិថិជនបានស្នើសុំ និងយល់ព្រមលើការធានានេះ
 ស្នាមមេដៃ/ហត្ថលេខា

.....
 ឈ្មោះ.....
 ថ្ងៃទី.....ខែ.....ឆ្នាំ.....

ព័ត៌មានសំខាន់ៗសម្រាប់បងបុព្វលាភធានារ៉ាប់រងតាមភ្នាក់ងារ អេ អឹម ខេ (AMK)

ឈ្មោះក្រុមហ៊ុនធានារ៉ាប់រង / Company Name : **Forte Insurance (Cambodia) Plc.**
 លេខកូដអ្នកផ្គត់ផ្គង់ / Supplier Code : **3288**
 ចំនួនទឹកប្រាក់ / Amount : (KHR) /(USD) /
 លេខទូរស័ព្ទអតិថិជន / Customer Phone Number :



Pilot Schemes | Past Experiences

Year of project	Insurance Products	Locations of Implementation	Insured			Claims			Loss Ratio (%)
			Farmer	Land (ha)	Total Premium	Farmer	# of Ha	Amount (\$)	
2015	WICI	BTB	60	60	1800	60	60	2,276	126
2016	WICI	PS, BTB	86	110	2422	86	110	3,737	154
2017	WICI	PS, BTB	13	13	357	12	12	303	85
2018	SMCI	PS,BTB,BMC,SR	99	150	5250	99	150	12,376	236
2019	SMCI	PS,BTB,BMC,SR	219	505	15150	120	342	24,956	165
2020-21	AYII-Dry Run	PS,BTB,PVG,TK	0	0	0	-	0	-	-
2021	WICI	BTB,PVG,KPT	675	887	8870	469	622	12,445	140
2022	WICI	BTB,PVG,KPT	1620	2424	24240	632	960	14,660	60

Potential collaboration between CFAVC and Forte

WICI Challenges in 2022	Proposed solutions	Methodologies
A. WICI Supplier		
2. The capacity of sales representatives/referral is limited (AC, VL, and key person).	Understand root causes of mal-adapted and vulnerable farming practices	Interactive training with exercises
3. The staff team is still limited the capacity to explain the product knowledge to the farmers.	Understand root causes of mal-adapted and vulnerable farming practices	Interactive training with exercises
B. WICI Beneficiaries		
1. Most farmers were difficult to understand the product.	Use User friendly training and promotion leaflets – Build trust and confidence	Interactive training and awareness raising
4. Some farmers hesitated to believe the product and the insurer even though the local authority assisted for reference.		
5. One or two farmers said last year he got the claim, and maybe this year he will not get the claim because the claim is depended on the insurer.		
6. We observed a few villagers truly follow their leader (village chief). if his leader does not buy, they cannot buy too.		
7. Lack of participation from farmers. Some family members (Head of family) went to work outsides their provinces for an income, so fewer people have attended the promotion meetings.		
8. Experience the claim last year have affected the farmers this year. So, they have not trusted the product even though the local authority, provincial officer, and Company were trying to explain them (Prey Veng).		
C. Public support		
9. Trust on index data (Satellite and Weather Station)	Involve scientist, demonstration farms	
10. Commune election (party's promotion) during the sales period.	PPIU, MAFF	
11. Covid-19 restriction.	PPIU, MAFF	

Other Ongoing Projects

Parametric Insurance

(Partnership with banks and MFIs)

Ongoing discussion about product design

Dry Run under RIICE Project

(Yield-Based Index)

discussing between MAFF, and Forte about the scope of collaboration

Other Ongoing Projects

- Cashew nut
- Mango
- Banana, Vegetable, etc.
- Aquaculture
- Pepper



Forte Live with
confidence.

Thank you

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Website: www.forteinsurance.com

Facebook: fb.com/forteinsurance

3.2

កាយប័ត្រឃ្លាំង

វិកាយប័ត្រឃ្លាំង
Warehousing
Receipts



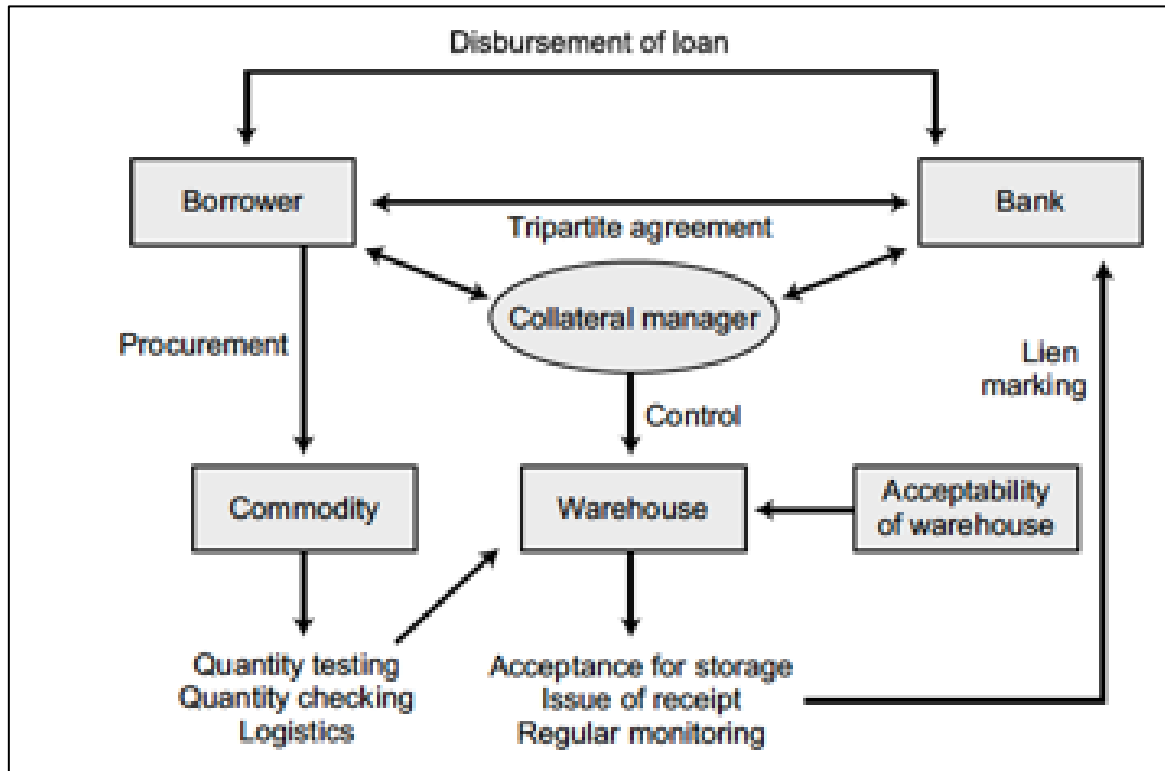


Figure 1: HDFC Bank warehouse system (Miller and Jones, 2010)

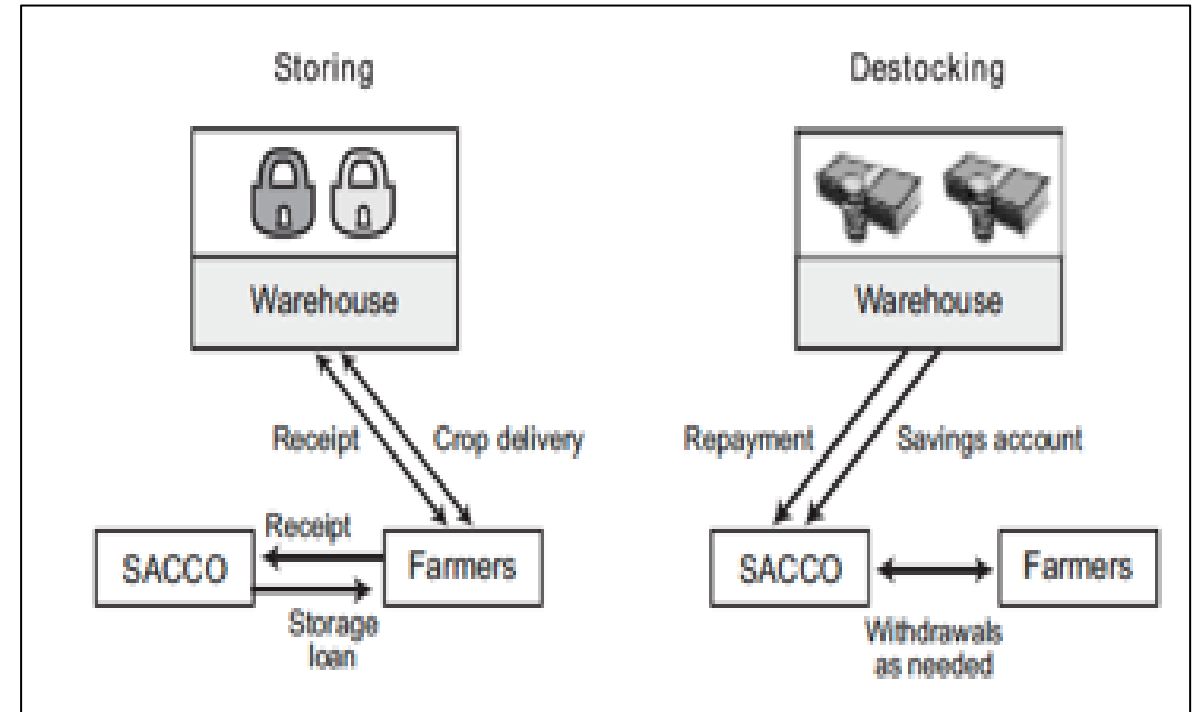


Figure 2: Cooperative warehouse system (Miller and Jones, 2010)

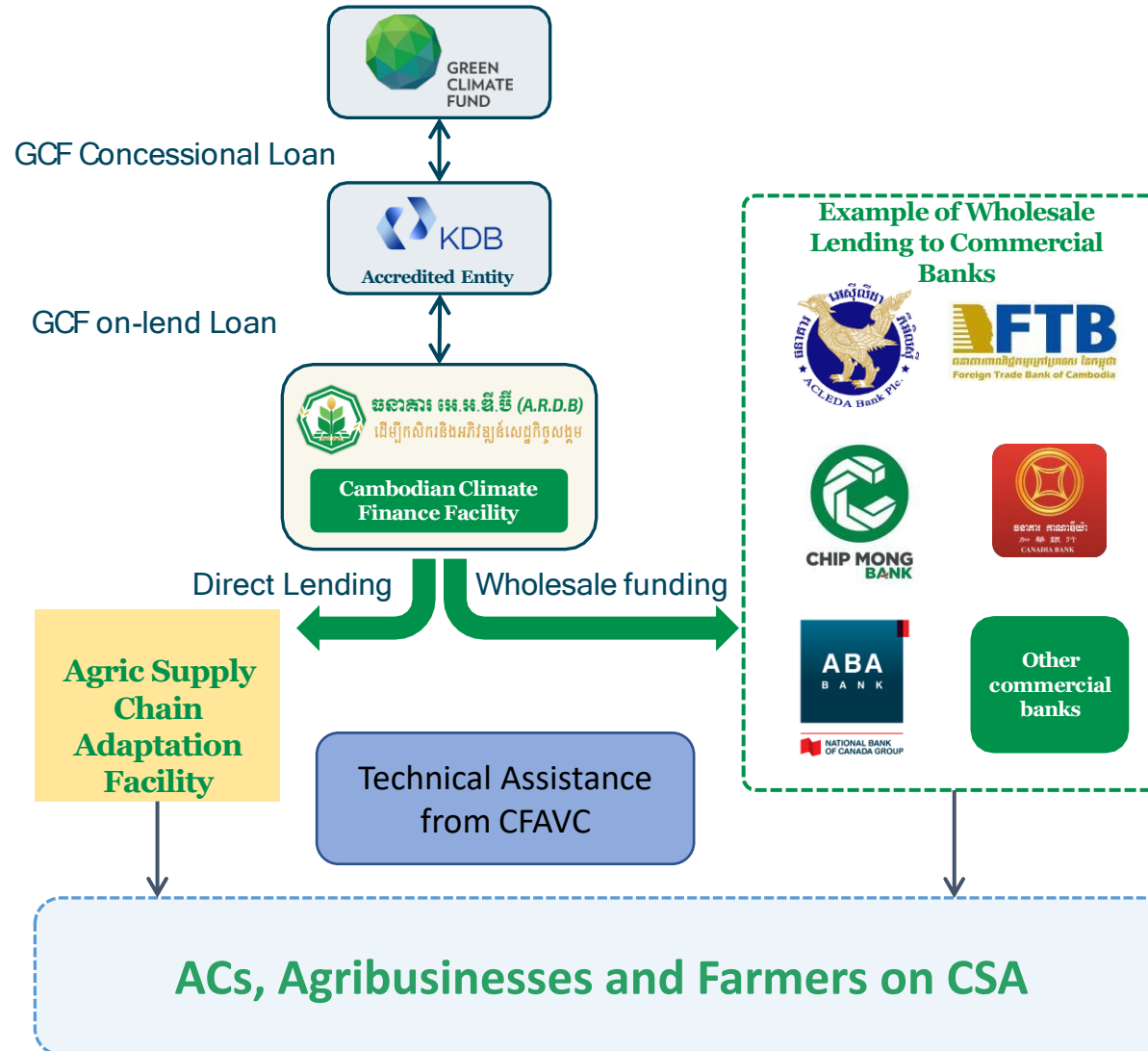
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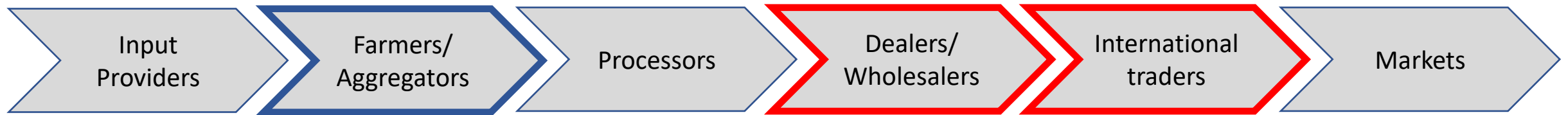
**តើយើងទទួលបានហិរញ្ញប្បទាន
បែកចេញបែបណា?**

How to access the
climate fund?



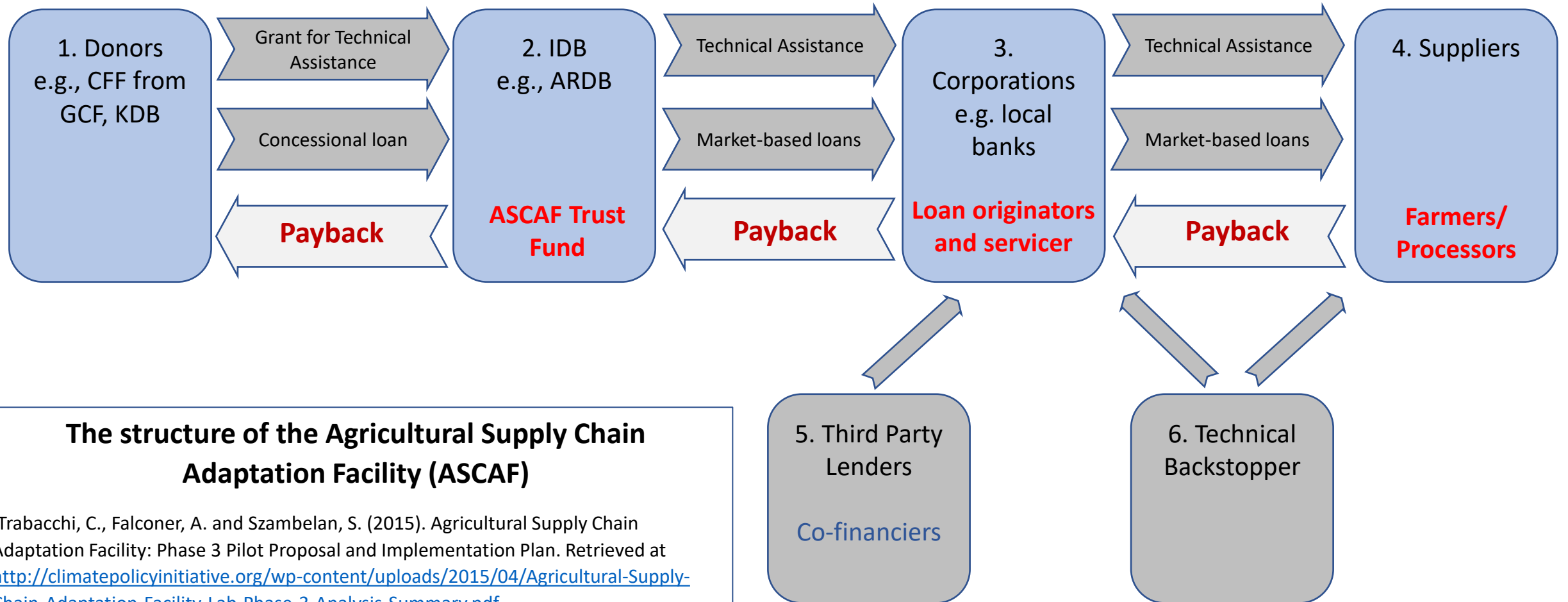
Financing Mechanism and Technical Assistance to access Cambodia Climate Finance Facility





ASCAF end beneficiaries

ASCAF Possible Entry points



The structure of the Agricultural Supply Chain Adaptation Facility (ASCAF)

Trabacchi, C., Falconer, A. and Szambelan, S. (2015). Agricultural Supply Chain Adaptation Facility: Phase 3 Pilot Proposal and Implementation Plan. Retrieved at <http://climatepolicyinitiative.org/wp-content/uploads/2015/04/Agricultural-Supply-Chain-Adaptation-Facility-Lab-Phase-3-Analysis-Summary.pdf>

Example of financial terms and conditions of GCF-loans

Terms and conditions	Public sector		Private sector
	High concessionality	Low concessionality	
Currency	Major convertible currency		
Maturity (years)	40	20	up to 20
Grace period (years)	10	5	up to 5
Annual principal re-payment	2% of initial principal in year 11-20	6.7% of initial principal in year 6-20	
Annual principal repayment years 21–40 (% of initial principal)	4%	N/A	
Interest	0.25%	0.75%	0.75% + credit premium – concessionality premium
Annual services fee	0.50% on disbursed balance	0.5 % on disbursed balance	0.50%
Commitment fee	up to 0.75% of undisbursed balance	up to 0.75 % of undisbursed balance	up to 0.75 % of undisbursed balance

Extra Videos

Mr **Nov Keo**

PGS Organic Farmer in Cambodia



Khin Toda

Irrigation Design
Engineer/Deputy Team Leader
Ministry of Agriculture,
Forestry and Fisheries

This contributes to greater rice yields,