green carbon

Unlocking Thailand's AWD Potential

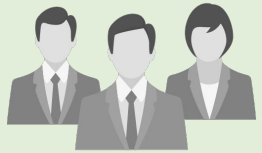
High-Integrity Implementation & JCM Pathway

Dec 2025

Company Overview

Vision: Save the earth with power of nature

Establishment	December 2019
Head Office	Tokyo, Japan
Branch	Australia Vietnam Philippines Thailand (coming soon) India (coming soon) Cambodia (coming soon)
Project **(Contract base)**	**AWD**: 1,500,000 ha (9,375,000rai) **Biochar**: 6,000t/y **Carbon Farming**: 3M ha **Mangrove**: 3,000ha **Reforestation**: 4,000ha **R&D**: (Confidential)



More than **200** members

Shareholders

NEOBANK 住信SBIネット銀行

MUFG 三菱UFJキャピタル

SMBC

FUYO LEASE GROUP

MANGROVE

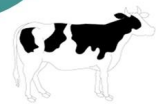
AWD

Carbon Farming

Nature Based Carbon Credit

Biochar

R&D



Livestock

■ Types of Carbon Credits Required by Companies

Credits are classified into systems led and operated by the UN/governments and systems led and operated by the private sector.

Below is the application status for Green Carbon.

UN / Government-Led Compliance Credits	**UN-Led**	Kyoto Mechanism Credits (JI, CDM), etc.	
	Bilateral	Joint Crediting Mechanism (JCM), Other pilot programs, etc.	
	Domestic Systems	J-Credit (Japan), CCER (China), ACCUs (Australia), etc.	
Voluntary Credits **Private Sector-Led**		VCS, Gold Standard, ACR, CAR, etc.	

Green Carbon's Application Status

JCM
No. 1 in Japan for the number of projects
※For Philippine AWD methodology

J-クレジット制度
Japan's first registered project (paddy field)
Japan's first and largest registered project (livesto[illegible])

VERRA
Gold Standard
World's first registered project (AWD)

Scheduled to be obtained or Planned to acquire

Project Development Track Record by Country (AWD)

14

Provinces

JCM

15

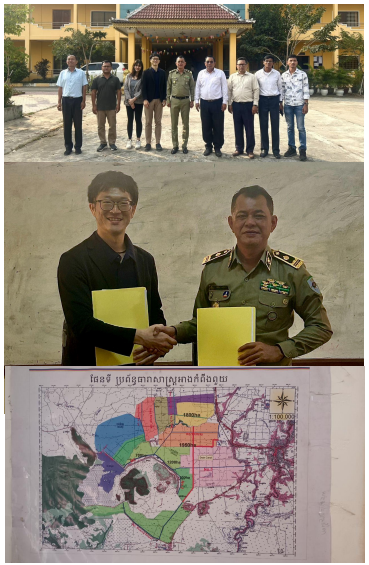
Provinces

3

Provinces

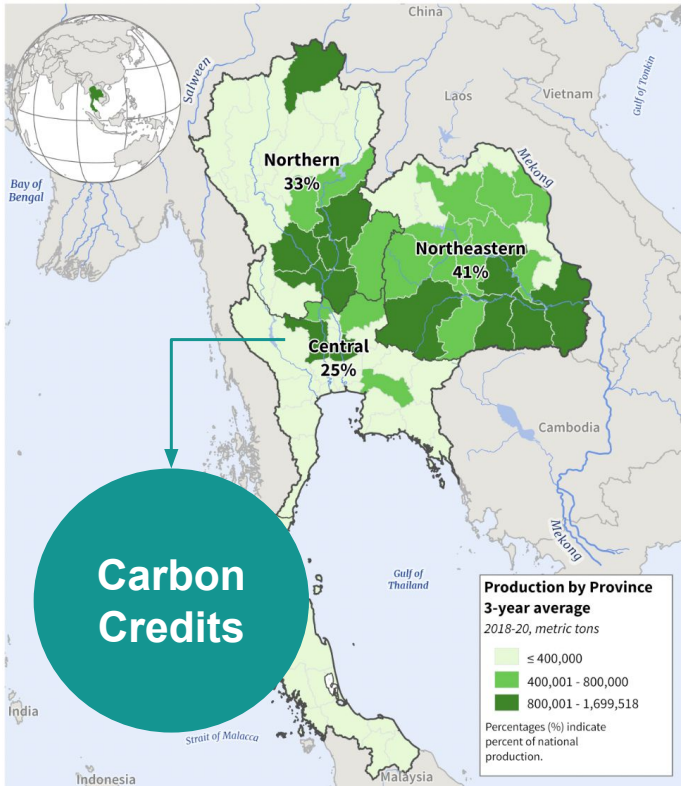
1

Province



Thailand AWD potential

Thailand has great potential for AWD, roughly 15MtCO2/year



The potential reduction in Rice Paddy Sector	
Total Paddy Fields	11M ha
AWD-applicable Fields	3M ha
Potential reduction	3M ha × 5t/ha/yr = 15MtCO2/yr

Government (Rice Dept / RID) + **Private Sector (GC)** + **Donor Programs (GIZ)**

Slow scale-up due to limited resources

Long-term (10–20 years) Sustainable

Strong technical support and scalable but time-bound

■ Field Data Collection by GC

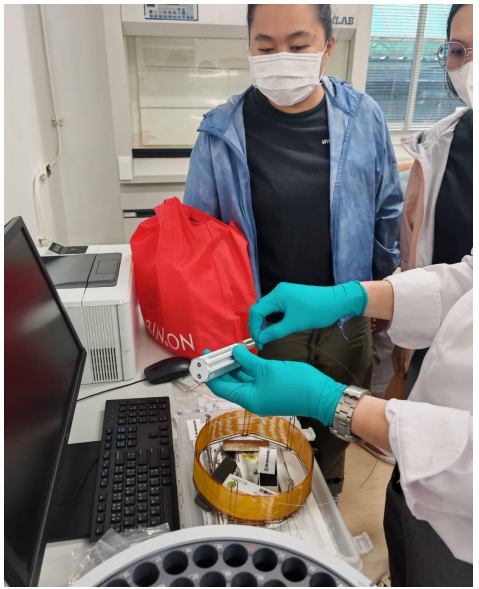
The projects are being implemented in collaboration with **local universities and government agencies.**

We are collecting agricultural field data for carbon credit generation.

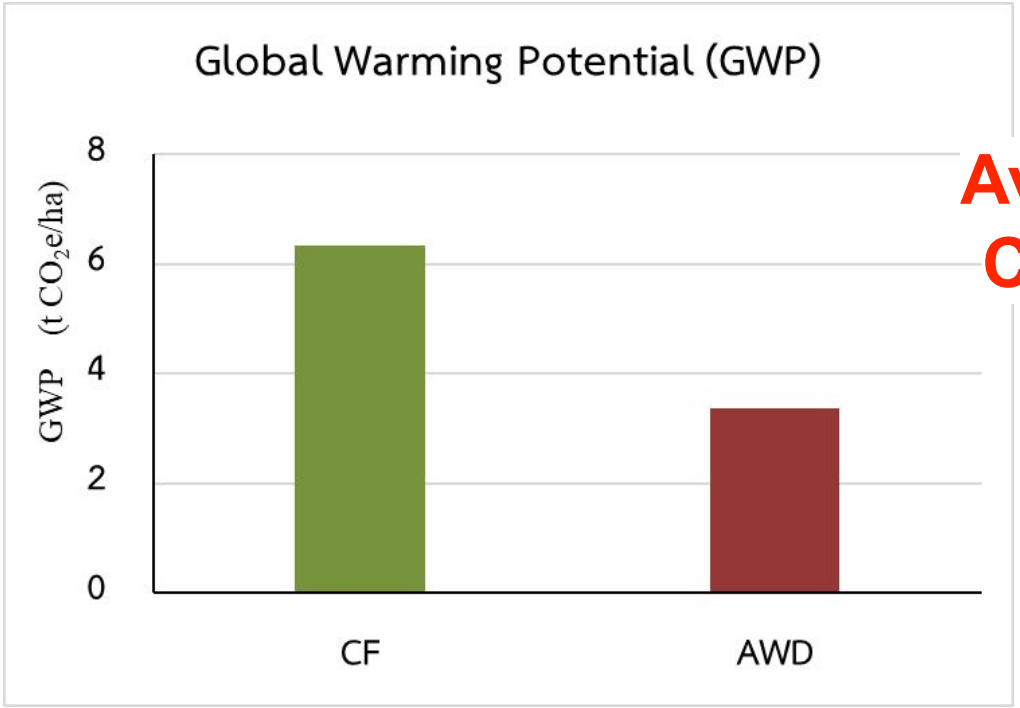
Partners

RIO

Rice seed center



AWD Project In Phitsanulok

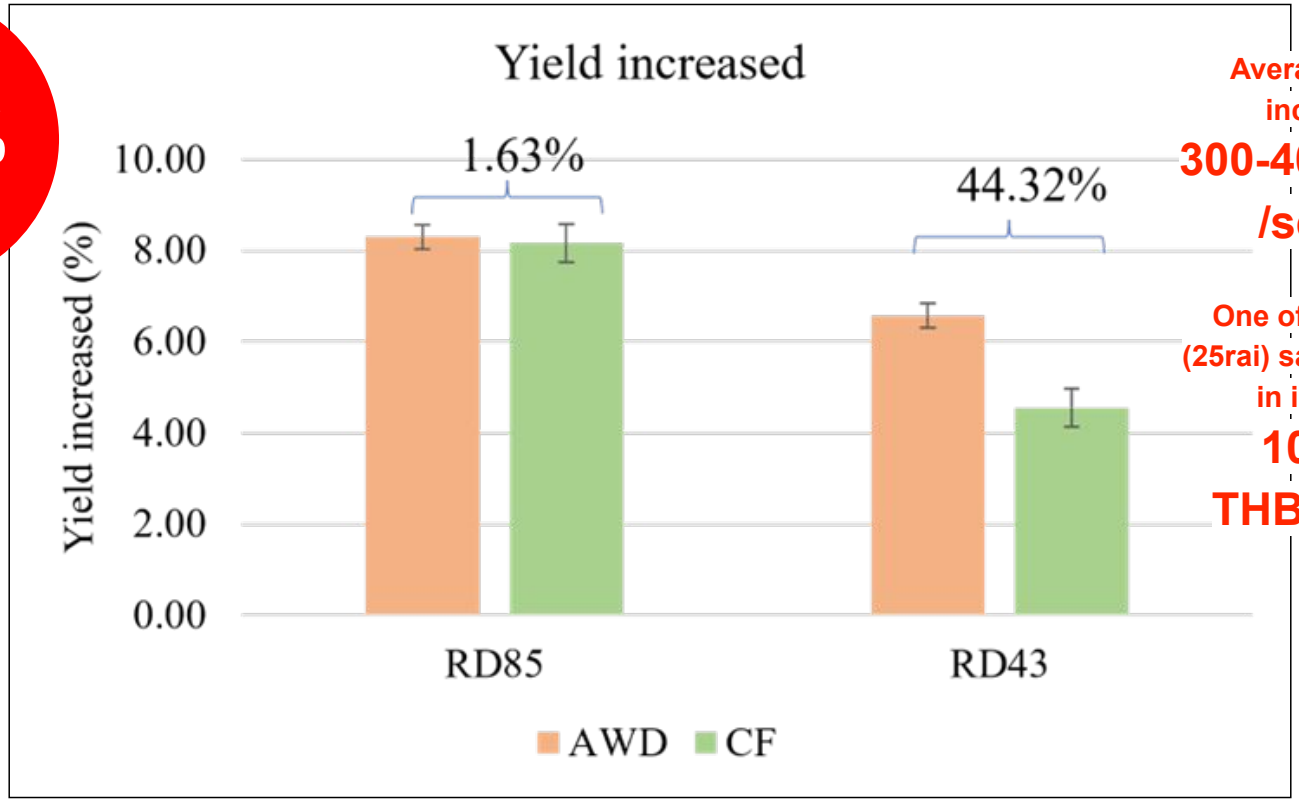


Avr:2.97 t Co2e/ha

Field experiment confirmed **~50% GHG reduction** through direct measurement — strong evidence supporting Thailand's NDC"

AWD Project In Phitsanulok

100%
Continuous Rate



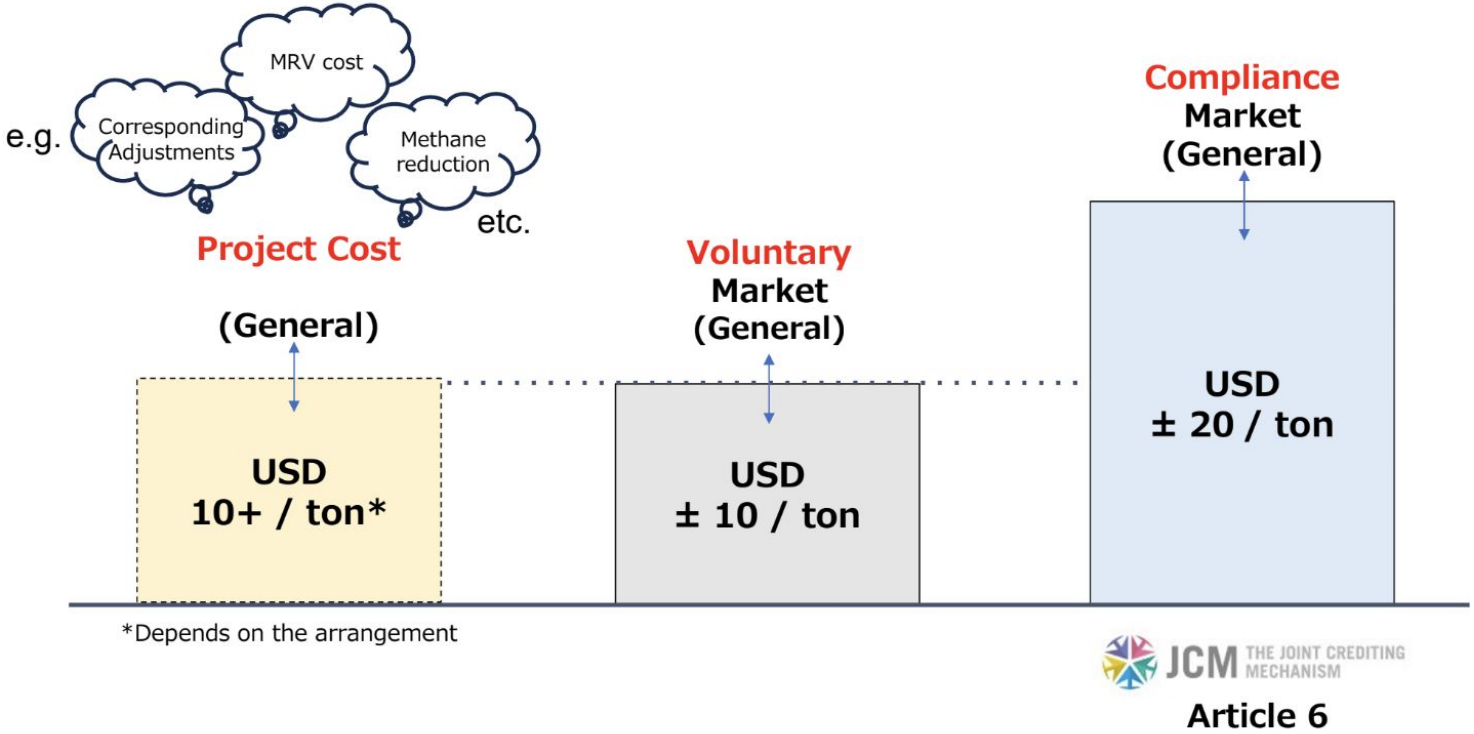
Average income increase of 300-400THB/rai /season

One of the farmers (25rai) saw an increase in income of 100,000 THB/season

On average, our AWD projects led to average **+5% increase** in rice yield, with the maximum recorded improvement reaching **+44%** (RD43 variety). Importantly, **no cases of yield reduction** were observed in any of our pilot sites.

Price vs. Cost comparison for AWD (general, subject to the conditions)

- Voluntary market may/ may not feasible due to the project cost. (conditional)
- Private sector may difficult to invest if the economics are not foreseeable.



Challenges of AWD project in Thailand

1 Methodological Misalignment (P-TVER vs. JCM)

- P-TVER and JCM differ in scope and MRV requirements, requiring harmonization.

2 Expansion Barriers: Land Rights, Field Conditions, and Farm Structure

- Land rights, unsuitable irrigation/terrain, and fragmented small farms limit scalability.

3 Policy Constraints and Limited Remaining Potential Areas

- The 3% rule and “easy AWD areas” may already be occupied reduce remaining potential.

4 Double-Counting Risks Due to Unclear Project Boundaries

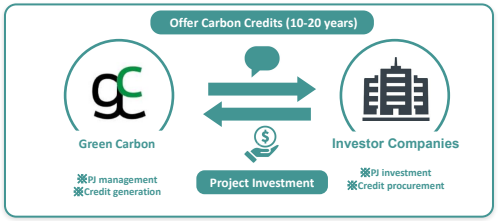
- Unclear project boundaries across developers create overlap and verification challenges.

Exploring the possibility of collaboration to expand AWD JCM

Thailand AWD Summary & Green Carbon's Contribution to JCM / Article 6

Investment Readiness

If Thailand can implement AWD under JCM, GC can immediately deploy large-scale capital.



Bridging P-TVER and JCM Methodologies

We help resolve gaps where Premium-TVER is currently "too loose" for JCM acceptance.

PREMIUM T-VER
JCM

Land Ownership Flexibility

Without practical substitutes for official land certificates, expansion will stall.

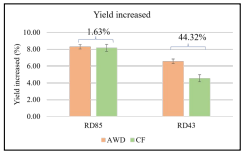
Avoiding Boundary Overlaps

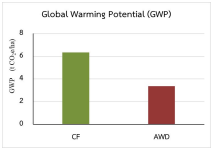
Thailand needs a national AWD boundary registry (GIZ, Klik, others)

Proven Field Impact

Yield ↑, profit ↑, water ↓, continuation rate 100%

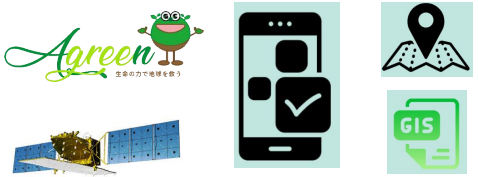
Pilot project data show strong farmer acceptance and immediate scalability.





High-Integrity MRV

Agreen digital MRV:
Satellite + DNDC + automated validation.



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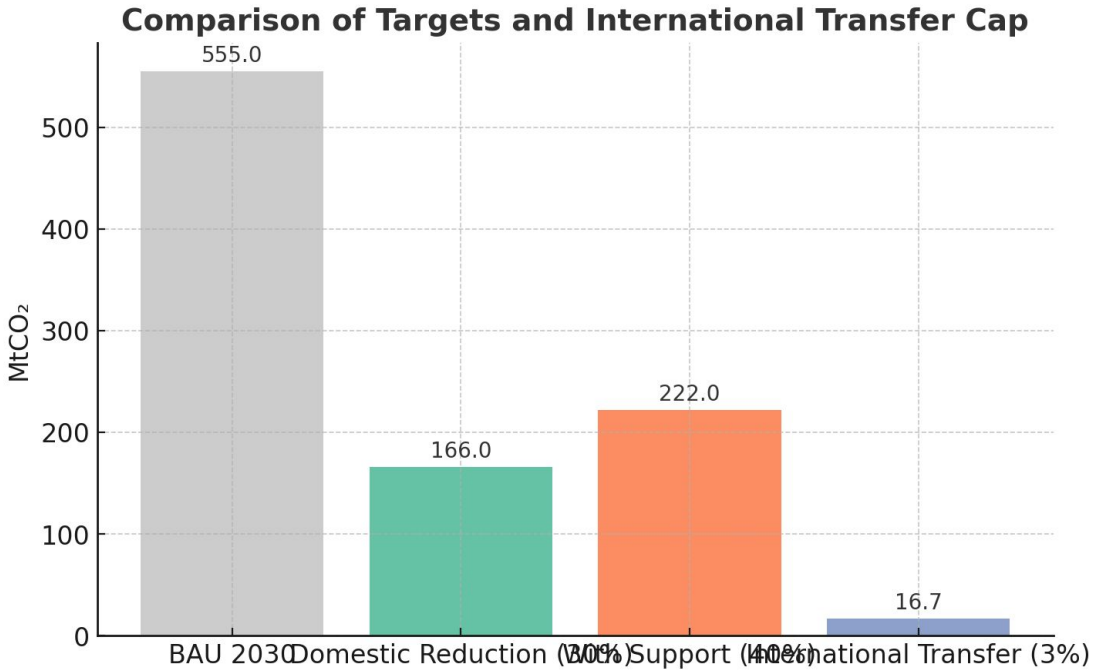
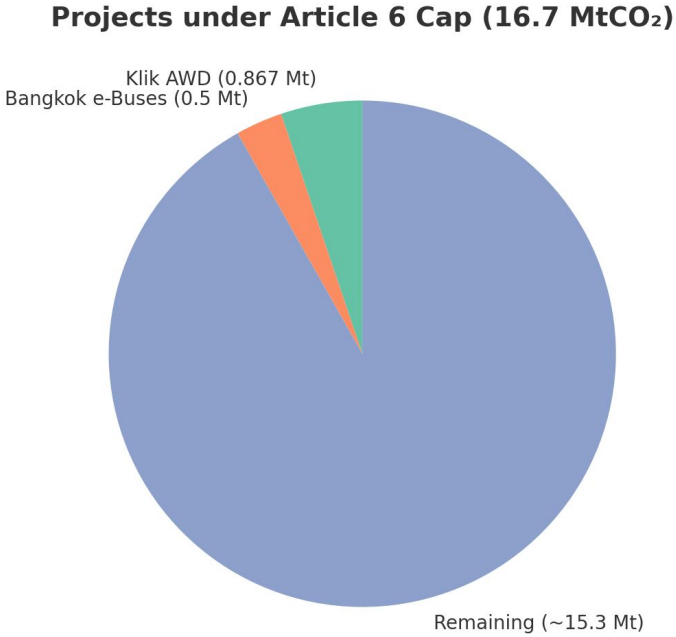
Appendix

International Transfer Rules (DCCE Guideline, Aug 2025)

- **3% of BAU 555 Mt CO2 cap**: max **16.7 $MtCO_2$** can be transferred abroad under Article 6 (2021–2030 cumulative).
  - Klik AWD Project (2025–2030): **0.867 $MtCO_2$**
  - Bangkok e-Buses Program (2022–2030): **0.5 $MtCO_2$**





About National Plans & Progress

- **What are the NDC targets and action plans as MOAC?**
  - **Livestock: 3M tCO2, AWD:1M tCO2**

Summary of GHG Reduction Targets under Thailand's Mitigation Action Plan by Sector in 2030[7]

Sector	Targeted GHG Emission Reduction by 2030					
	Domestic Implementation		International Support[a]			
			Under Implementation[b]		Under Development	
	$MtCO_2e$	%	$MtCO_2e$	%	$MtCO_2e$	%
1. Energy	124.6	22.5	-	-	32.0	4.8
2. Transport	45.6	8.2	-	-	2.5	0.4
3. Waste and Wastewater Management	9.1	1.6	-	-	1.9	0.3
4. Industrial Processes and Product Use	1.4	0.3	0.1	0.02		
5. Agriculture	4.1	0.7	1.0	0.18		
Total	**184.8**	**33.3**	**1.1**	**0.2**	**36.4**	**6.5**
			37.5 $MtCO_2e$ or approx. 6.7%			
	222.3 $MtCO_2e$ or approx. 40%					

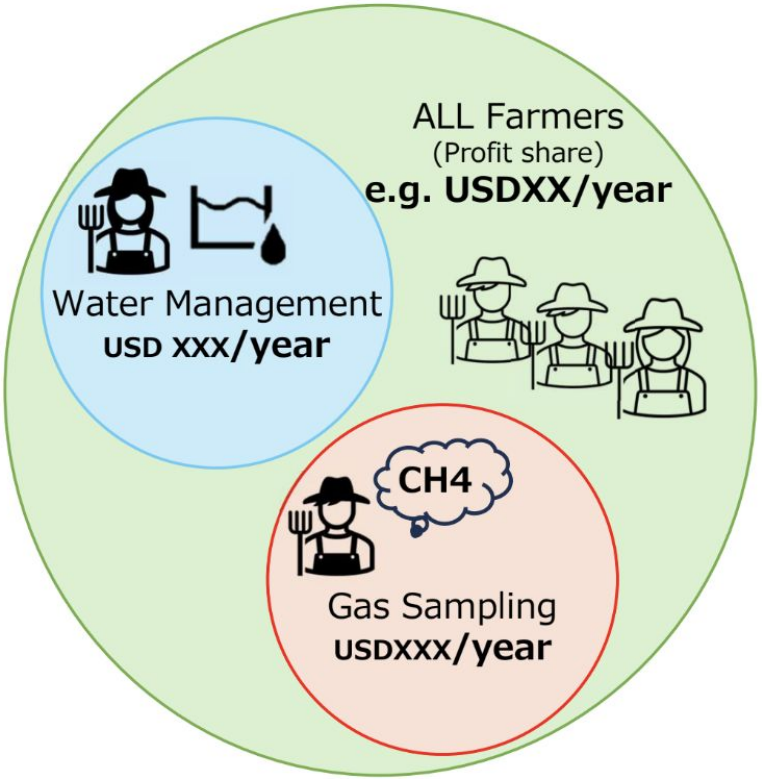
Understanding the “3% Cap Rule” and possibility

- If we carry out **10 AWD projects**, we have the potential to reduce CO2 emissions by **5M tCO2 by 2030**.
- We are ready to invest **hundreds of million USD (billions of baht)** if we secure compliance credit (JCM/ Article6)
- Expansion Requests from Other Provinces
    - Ayutthaya, Phichit, Petchaburi, Ubon Ratchathani, Kamphaeng Phet, Chainat, Mukdahan, Kanchanaburi, Kalasin, Khon Kaen, Maha Sarakham, Buri Ram, etc

	3% rule of ITMO(tCO2)	16,650,000											
	Total Reduction(tCO2)	**4,885,080**	29.34%										
	Total impremention size(	**977,016**											
		2025		**2026**		**2027**		**2028**		**2029**		**2030**	
		dry	**wet**	**dry**	**wet**	**dry**	**wet**	**dry**	**wet**	**dry**	**wet**	**dry**	**wet**
	Total Reduction CO2	0	1,080	5,000	16,500	42,500	120,000	225,000	375,000	600,000	825,000	1,150,000	1,525,000
	Total size	0	216	1,000	3,300	8,500	24,000	45,000	75,000	120,000	165,000	230,000	305,000
		2025		**2026**		**2027**		**2028**		**2029**		**2030**	
no.	**Project Area(province)**	**dry**	**wet**	**dry**	**wet**	**dry**	**wet**	**dry**	**wet**	**dry**	**wet**	**dry**	**wet**
1	F				100	1,000	3,000	5,000	10,000	15,000	20,000	30,000	35,000
2		10			100	1,000	3,000	5,000	10,000	15,000	20,000	30,000	35,000
3					100	1,000	3,000	5,000	10,000	15,000	20,000	30,000	35,000
4						100	1,000	3,000	5,000	10,000	15,000	20,000	30,000
5						100	1,000	3,000	5,000	10,000	15,000	20,000	30,000
6						100	1,000	3,000	5,000	10,000	15,000	20,000	30,000
7						100	1,000	3,000	5,000	10,000	15,000	20,000	30,000
8						100	1,000	3,000	5,000	10,000	15,000	20,000	30,000
GC exis			216	1,000	3,000	5,000	10,000	15,000	20,000	25,000	30,000	40,000	50,000
GC exis			7	2,000	5,000	10,000	15,000	20,000	25,000	30,000	40,000	50,000	50,000

AWD Benefit for the Province and Farmers (Sample computation)

- Need to consider not only for the profit-sharing portion, total benefit for the farmers



+

Yield Increase
USD 100+/ha/year
(5% increase case)

Application
For easy management & trustability

Organic Fertilizer
With our biochar

Micro Finance
With local bank

AWD rice sales
Profit share additionally

Water reduction
Pump cost (subject to system)

etc.

AWD Farmer Engagement & Sustainable Impact

Pilot Impact: Phitsanulok

44%

Max Yield Increase

Range: 5%–44% depending on variety

+2

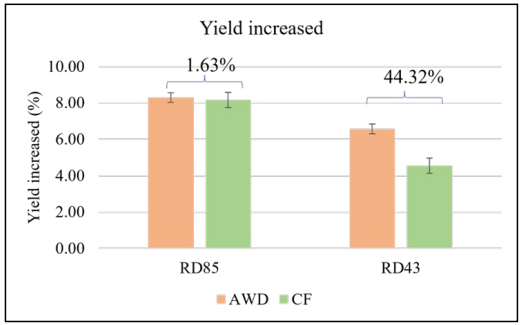
Tons Gained

Minimum yield gain per farmer

100k

THB Income

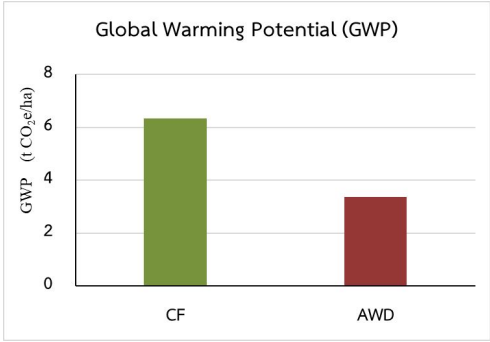
Additional seasonal income for 28 rai



100%

Continuation Rate

All farmers who participated in the pilot project want to continue.



Additional income by increase yield through AWD project

Scenario	Baseline yield (t/ha) ผลผลิตพื้นฐาน	Farm-gate price (THB/t) [ตัวอย่าง] ราคาข้าว	5% yield gain (t/ha) ผลผลิตเพิ่มขึ้น 5%	Added revenue from yield (THB/ha) รายได้ที่เพิ่มขึ้นจากผลผลิต	Coop payment (THB/ha) การจ่ายเงินค่าเข้าร่วมโครงการ	Monitoring payment (THB/ha) รายจ่ายการติดตาม	Total gain (THB/ha) รายได้รวมต่อเฮกตาร์	Total gain (THB/rai) รายได้รวมต่อไร่
Irrigated white rice (Central lowland area) – normal price ข้าวขาวชลประทาน (พื้นที่ราบภาคกลาง) – ราคาปกติ	5	8,000	0.25	2,000	350	0	2,350	376
Irrigated white rice – relatively low price ข้าวขาวชลประทาน – ราคาค่อนข้างต่ำ	5	7,100	0.25	1,775	350	0	2,125	340
Irrigated white rice – higher yield ข้าวขาวชลประทาน – ผลผลิตสูง	5.5	8,000	0.275	2,200	350	0	2,550	408
Jasmine rice (Northeastern/Northern rainfed area) – normal price ข้าวหอมมะลิ (พื้นที่ฝนตะวันออกเฉียงเหนือ/ภาคเหนือ) – ราคาปกติ	3	16,000	0.15	2,400	350	0	2,750	440
Jasmine rice – high price ข้าวหอมมะลิ – ราคาสูง	3	17,200	0.15	2,580	350	0	2,930	469
Sticky rice – typical ข้าวเหนียว – ราคาปกติ	3.5	11,000	0.175	1,925	350	0	2,275	364
Low-yield case กรณีผลผลิตต่ำ	4	8,000	0.2	1,600	350	0	1,950	312
High-yield, moderate price ผลผลิตสูง ราคาปานกลาง	6	8,500	0.3	2,550	350	0	2,900	464

It is increase yields by an average of 5% in our AWD project, bringing in an additional income of 300-400 THB.