

Current Status and Future Prospects of Korea's Forest Carbon Offset System

17 Jun, 2025.

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KoFPI

stands for the “**Korea Forestry Promotion Institute**”, a public institution under the South Korean government **responsible for all tasks related to forestry** in the South Korea.



산림청

Korea Forest Service

Policy making

commitment



한국임업진흥원

Korea Forestry Promotion Institute

Implementation

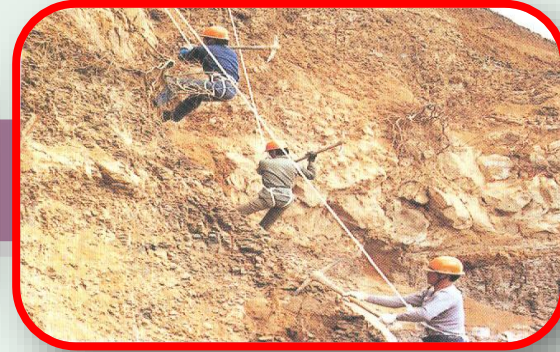
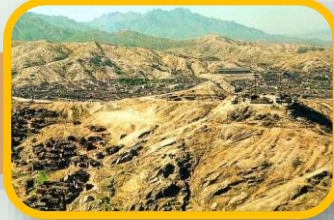
01 |

Forests in Korea

Korea has succeeded in reforestation national-wise

- Change of Korea Forests

1950s



1970s



2000s



Future

Sustainable Utilization and Management



CGCMG
Center for
Global Climate and
Marine Governance,
GRI of Korea University

Capacity Building on Climate Change Series Vol. 5



The Role of Effective Institutional Coordination for Successful Reforestation : Lessons from the Republic of Korea

Sarwat Chowdhury and Julie Adiwala



Role of effective institutional coordination for successful reforestation

MARCH 25, 2020

Publication:

The Republic of Korea experienced an extraordinary forest transition, it is one of only four countries and the only former developing country, to succeed in rehabilitating its forests following World War II. This paper focuses on Korea's approach to reforestation, specifically, ministry-level coordination and collaboration. The publication explores, the effectiveness of a comprehensively integrated policy approach that has both horizontal and vertical components; and has detailed, concrete objectives while delineating clear responsibilities among a variety of stakeholders.

But, forests are aging

AGING Forest

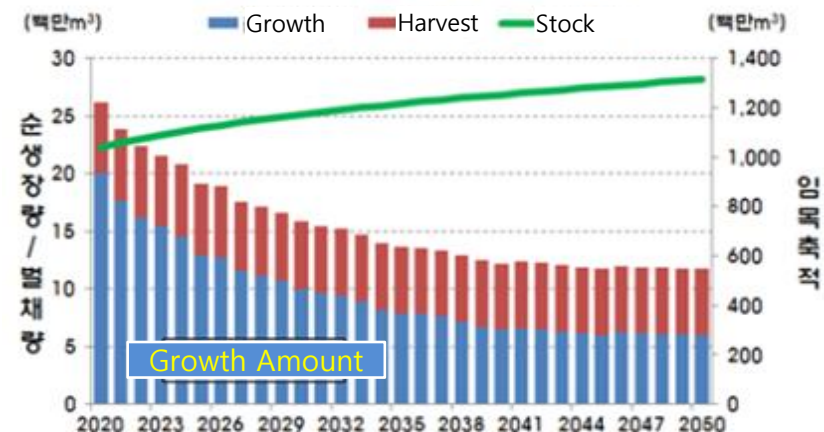
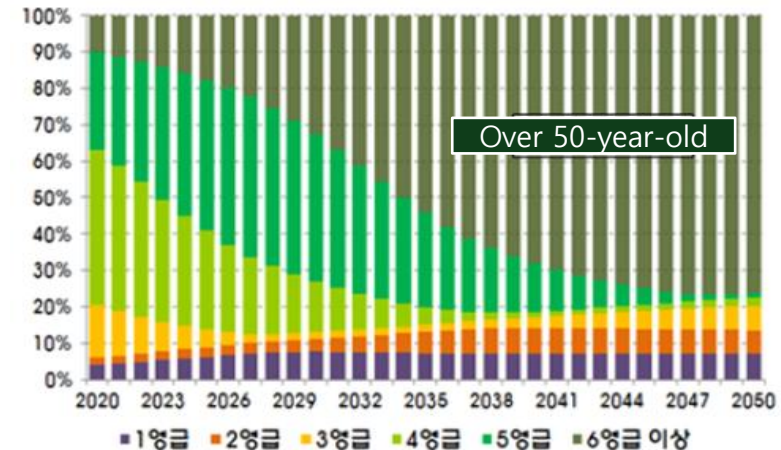
According to the NIFOS*,
Korea's Forests are rapidly aging.

Forest area over 51 years old is currently
around 10%, but it will **increase to more than 70%**
by 2050.

As a result, the annual growth of forest per hectare
is expected to **decrease by more than 50%**.
($4.3\text{m}^3 \rightarrow 1.9\text{m}^3$)

* National Institute of Forest Science

Forest age structure



• Source; National Institute of Forest Science. 1

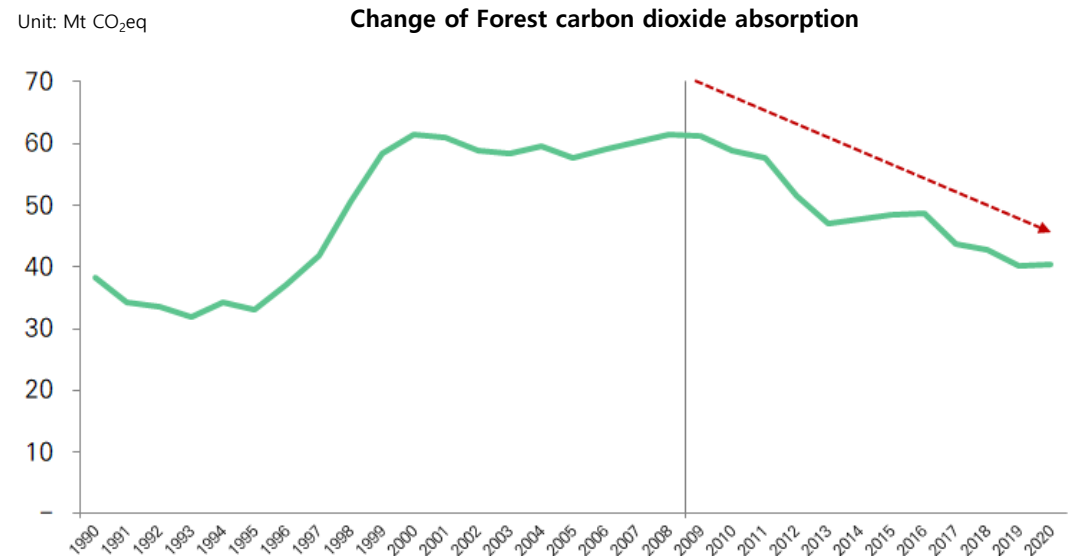
Carbon absorption also decreases.

GHG absorption in Forest

The decrease of growth leads to less carbon dioxide absorption.

46 million tons as of 2018,
to **decrease to 24 million tons in 2030**,
to **14 million tons in 2050**

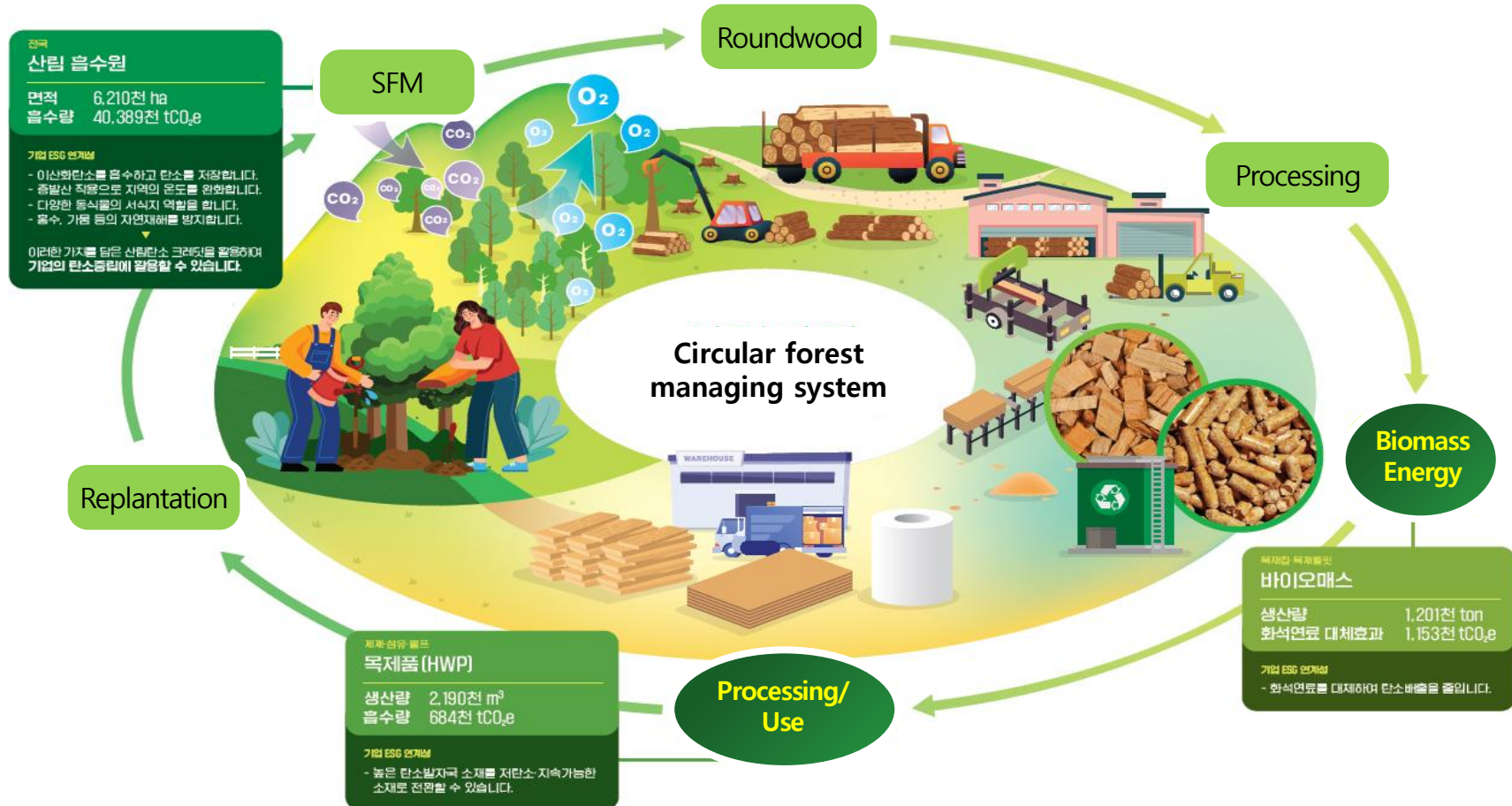
● Forest carbon absorption forecast



- Source; Ministry of Environment. 2022. Publication of regional GHG inventory based on metropolitan council(1990-2020).

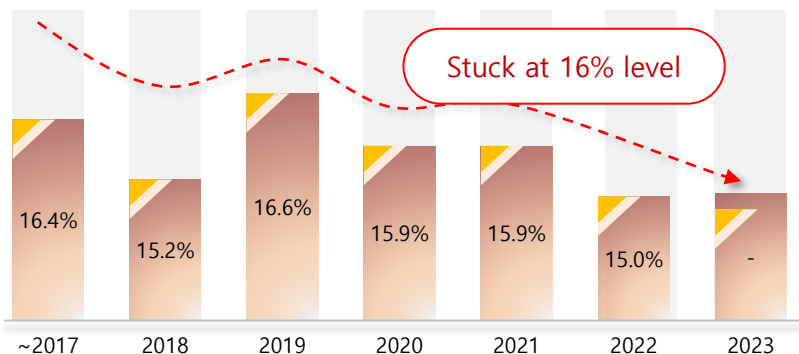
The answer is SFM (*Sustainable Forest Management*).

기후 대응을 위해 산림자원을 지속가능하게 이용합니다.



So, it is important to industrialize forest business.

Domestic wood utilization rate (%)



Domestic wood utilization rate (%)

- Carbon absorption↓ through forest management
- Carbon storage↓ using wood products
- Alternative effects↓ such as forest biomass energy

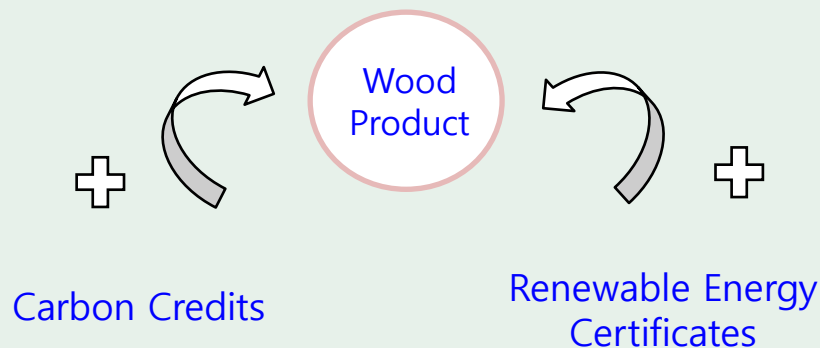
Poor conditions for *forest management*

- Poor forest ownership : 1.88ha/person
- People over 60 years old is 60.5%
- People leaving other cities is 59.8%



Making the forestry industry attractive

Profitability should be improved



02 |

Korea Forest Carbon Offset Scheme

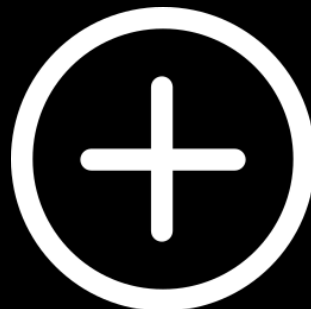
KFCS (Korea Forest Carbon offset Scheme)

A system in which forest owners and companies **voluntarily engage** in activities to maintain and enhance carbon sinks(trees), **additional forest carbon sequestration**, and certify the amount of CO₂ which is sellable in carbon markets.

Voluntary



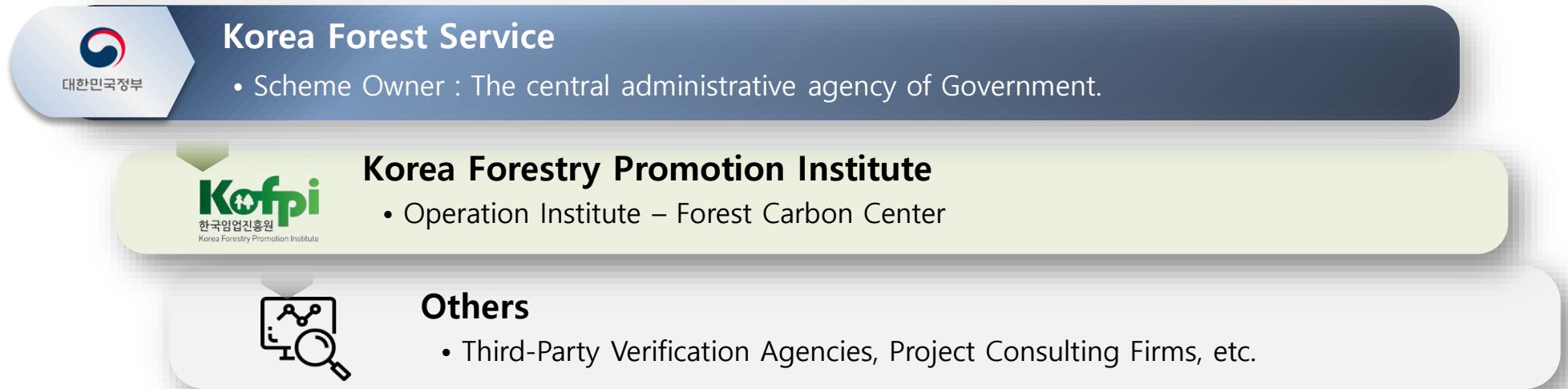
Additional activities



Guaranteed by the government



Overview of the scheme



Based on 「**the Act on the Management & Improvement of Carbon sink**」 * Act No. 18469, Sep. 24, 2021

Operating Standards

- Provide about Project type, Management method, etc.

Methodologies

- Provide Requirements, Carbon calculation(Formulas), Monitoring factors, etc.

Guidelines

- Forest survey methods, Project Planning, Validation methods, etc.

Past milestones

KFCS began by registering 2 projects in 2013, reached 100 projects by 2016, and grew to 500 projects by 2022. As of now, 664 projects are registered. The issuance of carbon credits started in 2017 and has significantly increased, surpassing 183,958 tCO₂ in 2023.



Most trusted voluntary carbon standard in South Korea

KFCS is the **largest and most trusted voluntary carbon standard** in South Korea.

136 companies and NGOs are participating in projects with small-scale forest owners.

Once all these projects are completed, the expected total **carbon dioxide absorption will reach 18millions tons.**



KFCS helps the local communities and our environment

Through carbon-offset projects, forest owner **can receive various form of direct and indirect assistance**(such as financial assistance, job opportunity...)



Method to earn carbon credits

The 'methodology' defines the **specific procedures and standards** for how the KFCS project will achieve GHG reduction effects. KFCS has a total of 7 methodologies



**Afforestation/
Reforestation**



**Utilization of
wood products**



Revegetation



**Improving
forest types**



**Improving forest
management
through extension
of rotation age**



**Reforestation in
areas damaged by
forest fires**

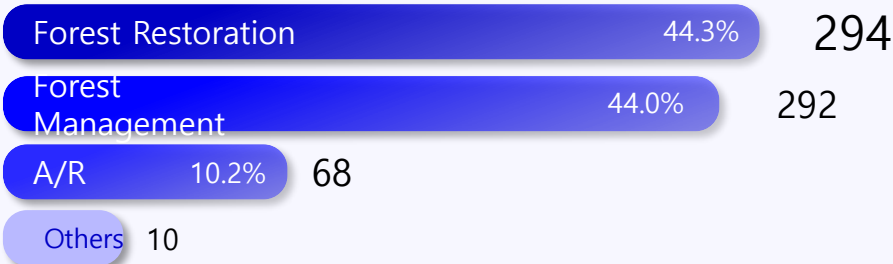


**Utilization of
forest biomass
energy**

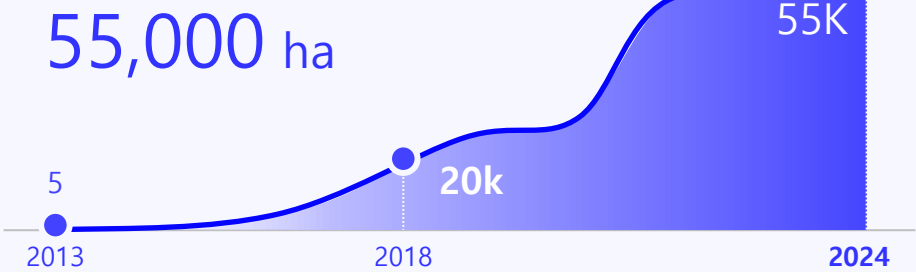
Status of the scheme

As of Dec 31, 2025

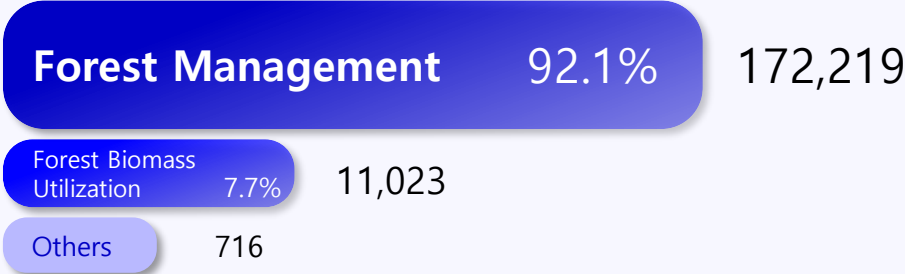
Registration status by project type



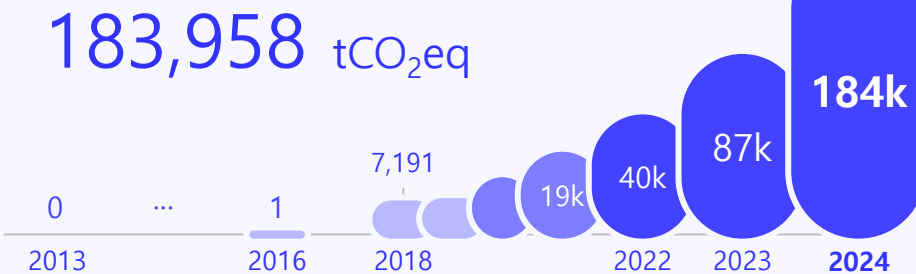
Registered scale (cumulative)



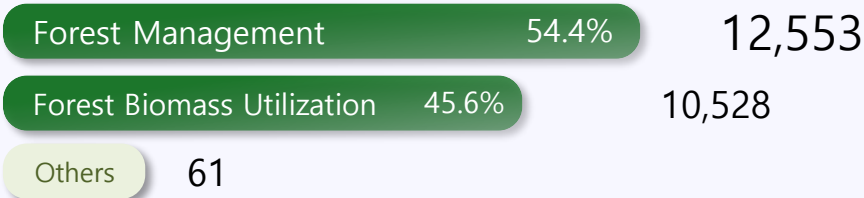
Certification status by project type



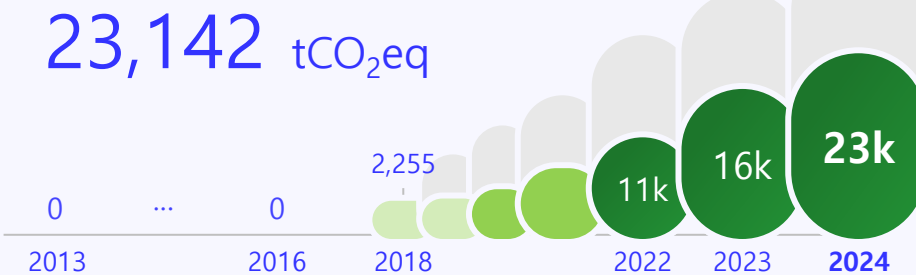
Certificated credit (cumulative)



Transact & Offset credit (ha; cumulative)



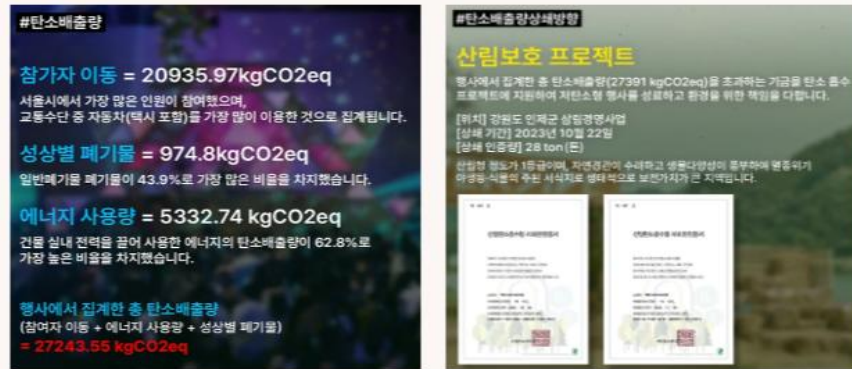
Retired credit (cumulative)



Use and retire

① Carbon Neutral events

THE AIR HOUSE 페스티벌은 음악과 문화를 즐기는 동시에 환경과 지역 커뮤니티를 생각하는 새로운 축제 문화를 제시하고 있어요. 2박 3일간 진행되는 이 페스티벌에서는 모든 식기를 대화용기로 사용하고, 참가자들의 자동차 이용을 줄이기 위해 셔틀버스를 제공했어요. 또한, 행사에 사용되는 구조물은 모두 재사용해 온실가스 배출을 최소화했어요. 그럼에도 어쩔 수 없이 발생하는 탄소는 산림탄소상쇄크레딧을 활용해 '0'로 만들었어요.



(출처: The Airhouse, www.the-airhouse.com)

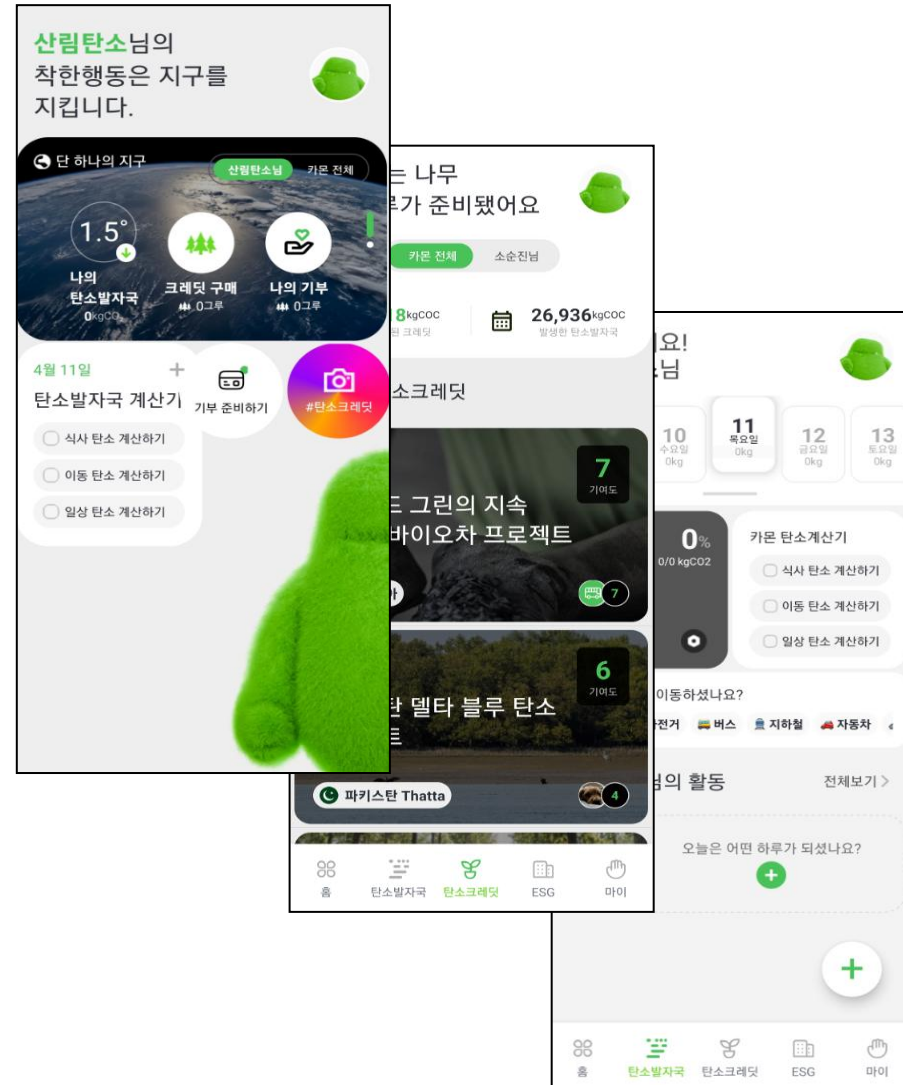


넷제로프로젝트

(출처: 단녹워, www.2030cnc.go.kr)



② Carbon Offsetting App Platform open to Public



New waves

(Carbon Neutral Products) Deleting carbon footprint by forest carbon credits

다산출판사 탄소제품 증명: 탄소 크레딧을 구매한 톤수에 따라 차등 지급
*100톤 이상 구매시 특별히 제작된 나무 사회환원증서 제공



타가: 아토프 비타립밤
2톤 이하 구매시
탄소상쇄 단계
Carbon Offset
탄소발자국 일부 지우기 성공!

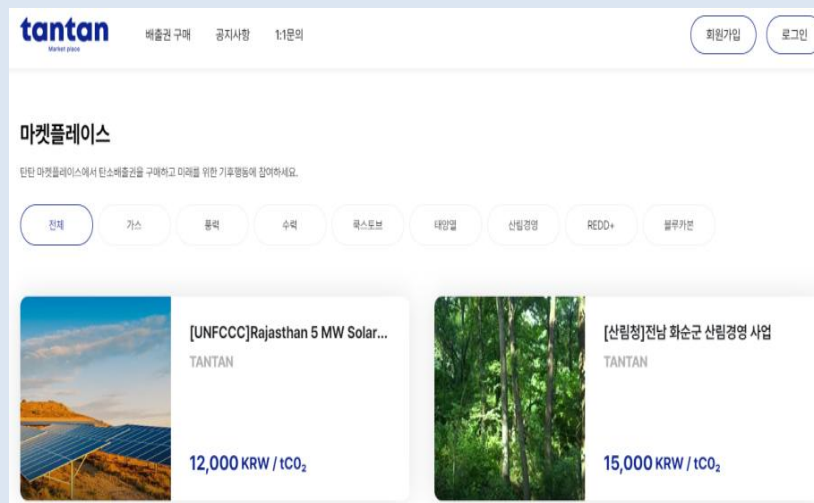


싱글룸: 문구 5종 세트
4톤 이하 구매시
탄소중립 단계
Carbon Natural
탄소발자국 모두 지우기 성공!



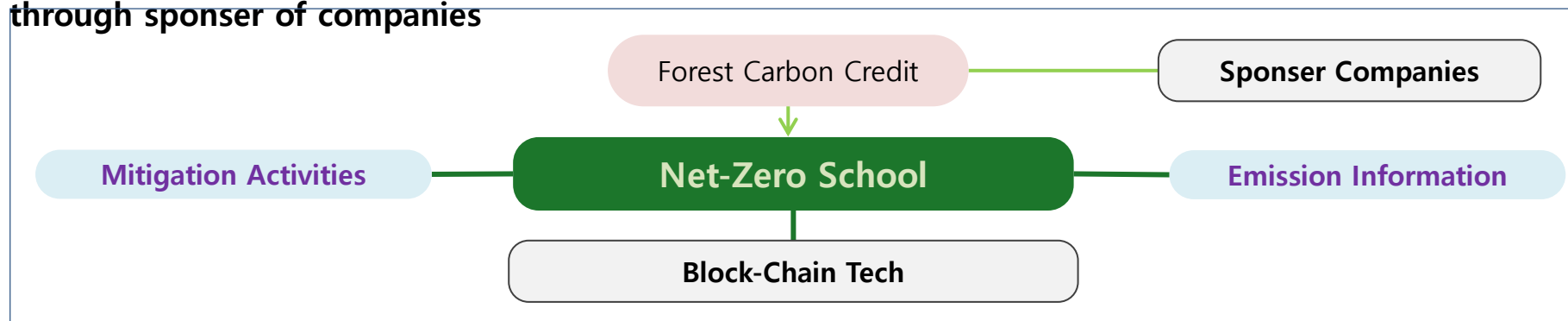
타가: 아토프 크림 250ml
5톤 이상 구매시
탄소네거티브 단계
Carbon Negative
훨씬 많은 탄소 발자국 지우기 성공!

(Market Place) Credits accounting one-stop service offsetting using forest carbon credits



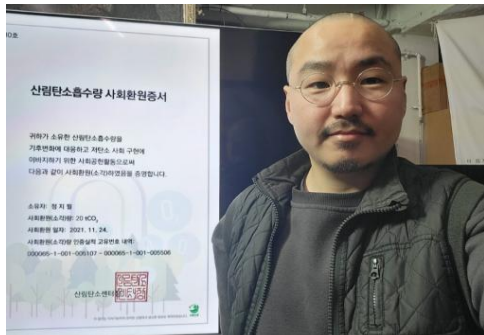
(Net-Zero School) Helping school and student to reach carbon neutrality by providing forest carbon credits

through sponsor of companies



New waves _ Various Campaigne









"Puls our forests" Deleting Carbon Footprints from daily lifes using forest carbon credits



03 |

Way forwards

How different from global schemes?

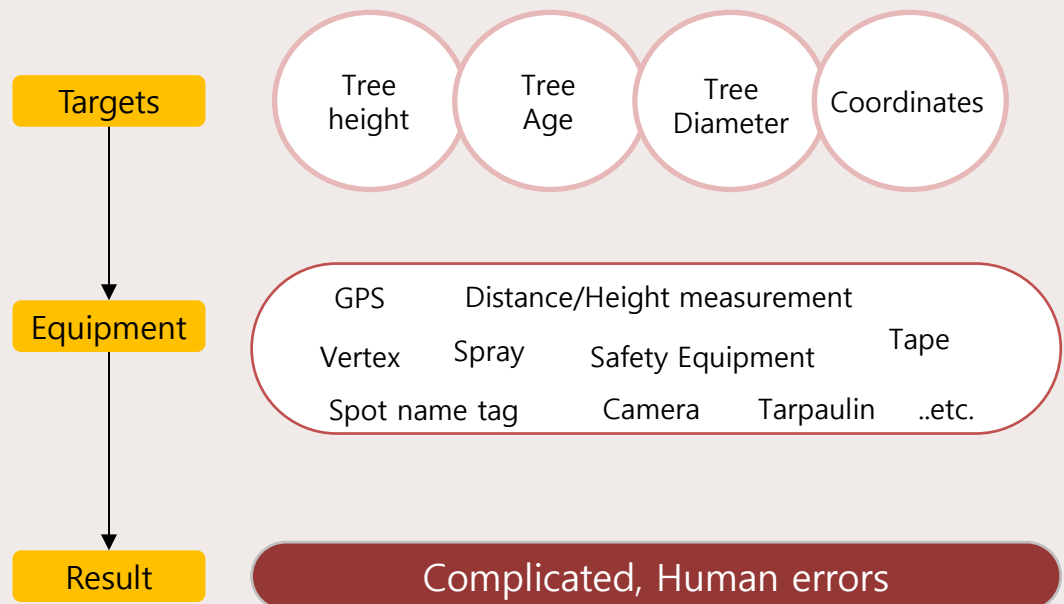
| Schemes | Region | Start year | Projects | Avg. Estimated Annual GHG sequestrations |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------|--------------|------------------------------------------|
|  K-ETS Forest parts | Korea  | 2015 | 30 Projects | 137 tCO ₂ -eq |
|  산림탄소상쇄 (Voluntary) | Korea  | 2013 | 279 Projects | 1,102 tCO ₂ -eq |
|  |  52 Countries | 2011 | 296 Projects | 388,852 tCO ₂ -eq |
|  |  17 Countries | 2003 | 22 Projects | 16,317 tCO ₂ -eq |

(Current) Difficult Forest survey & Carbon calculation

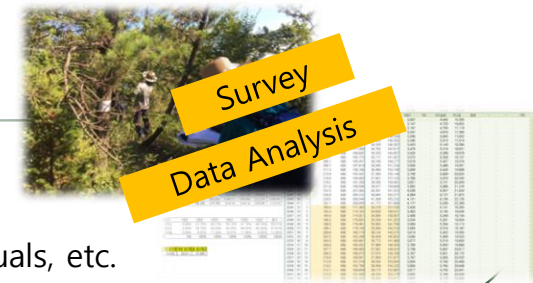
Current forest surveys have a risk of incorrect result (complicated, human errors etc) and safety accidents.



• Forest survey process



(Current) Process Complicated



STEP
1

Project development

- Request to register projects
- Implement project



Developers

* Companies, individuals, etc.

STEP
2

Project registration

- Validation
- Project evaluation & registration



Operation Institute

* Korea Forestry Promotion Institute

STEP
3

Monitoring & Verification

- Submit monitoring reports
- Third-party Verification



<Monitoring>

Developers



<Verification>

Robust verification
by independent
third-party

STEP
4

Certificate of 'Carbon Credit'

- Credit issuance



Scheme owner

* Korea Forest Service

STEP
5

Credit Trading & Offsetting

- Developers – Buyers Trade
- Track in 'Forest Carbon Registry'



Buyers

(Next) High-tech forest survey

Utilize 'AI analyzing images' and
'blockchain technology' for precise MRVs

Exist



Forest Carbon Registry

System of Korea Forest Service.

Input

Upload

validation

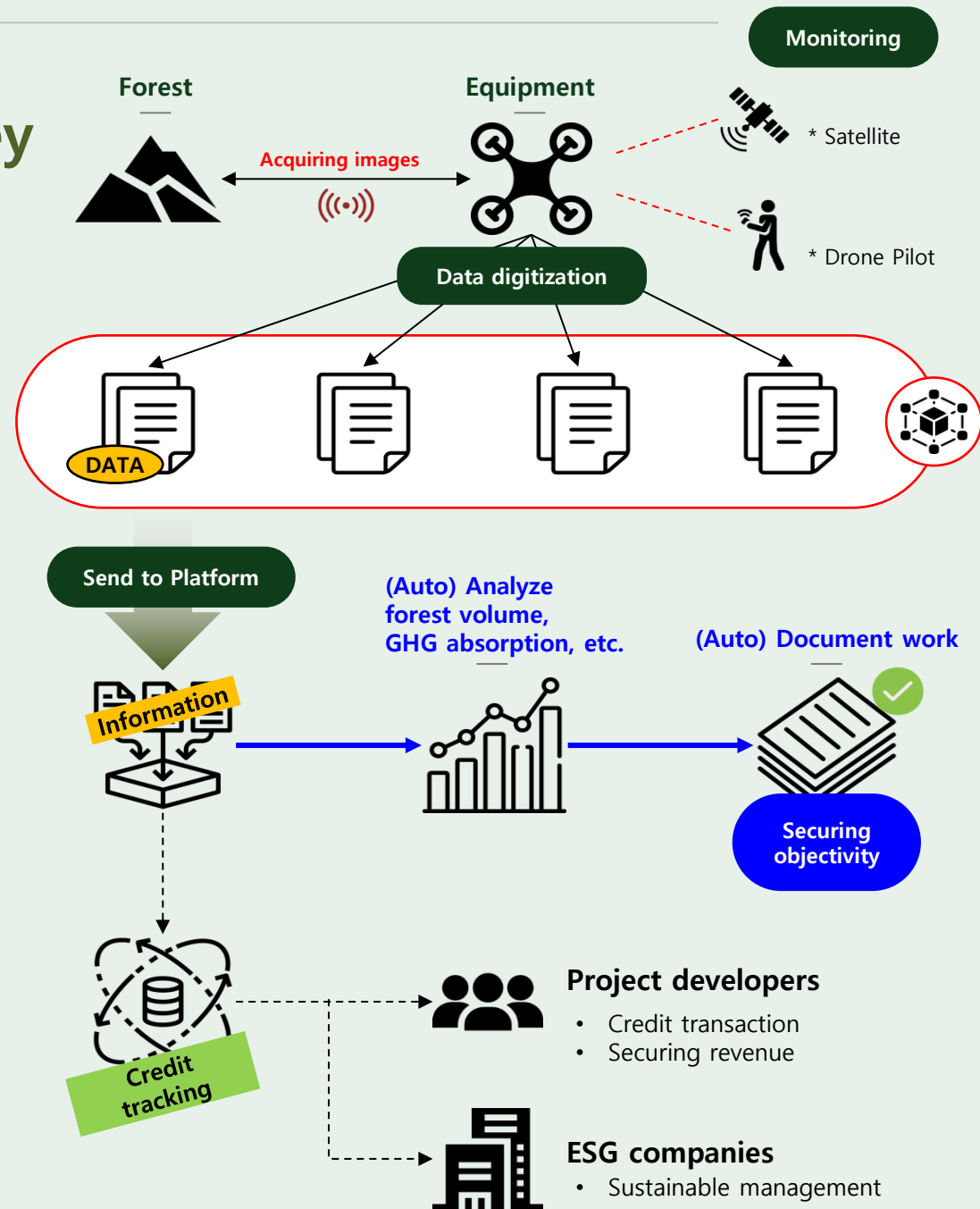
Register

NEW



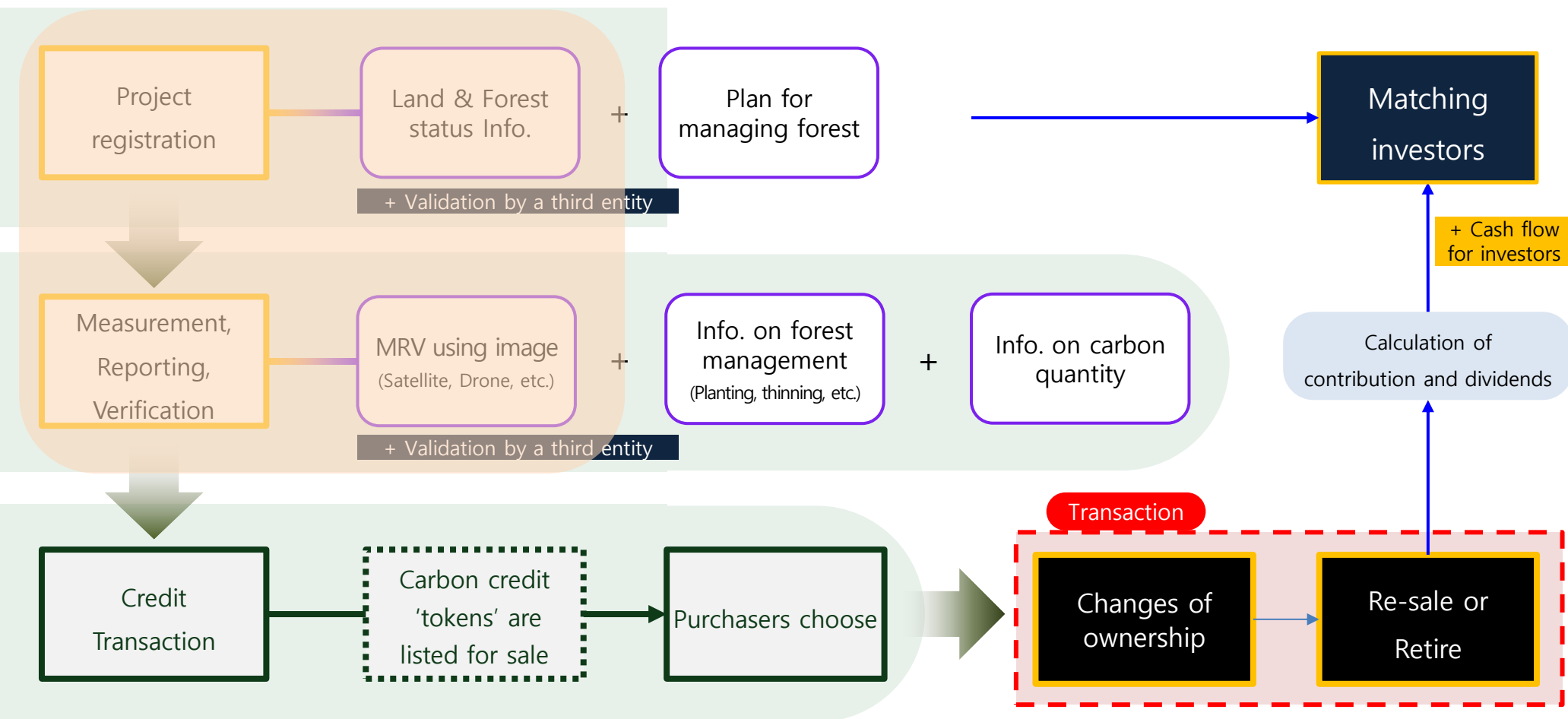
Forest Carbon Platform Based on Blockchain-tech

- * Collect image information of forest using drones, satellites etc.
- * Automatically analyzes the collected data (forest volume, greenhouse gas absorption, etc)
- * Automatically make relevant documents
- * Open to all participants



(Next) Forest Carbon Registry, and **Transaction/Investment Platform**

- Building the management platform based on Blockchain-tech**



(Next) Co-work with ESG Companies

Environmental

The only carbon sink 'Forest', recognized by the United Nations.

Forests are an important countermeasure in the era of climate crisis.

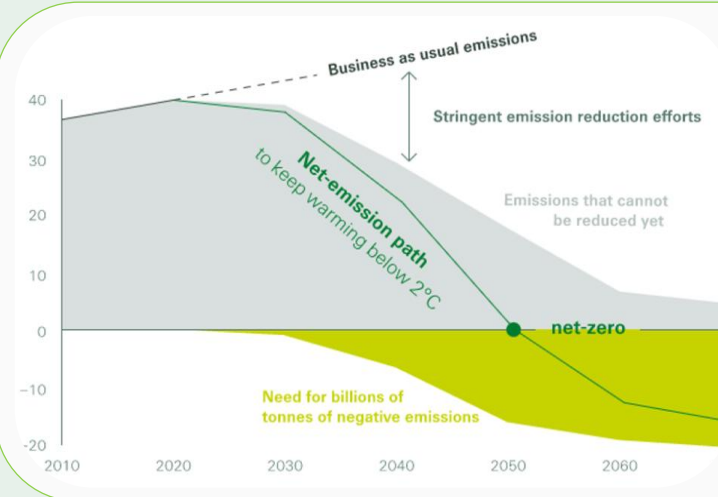
Social

Local districts in the risk of extinction,

Revitalizing the local economy and creating jobs through the use of abundant forest resources in mountain villages.

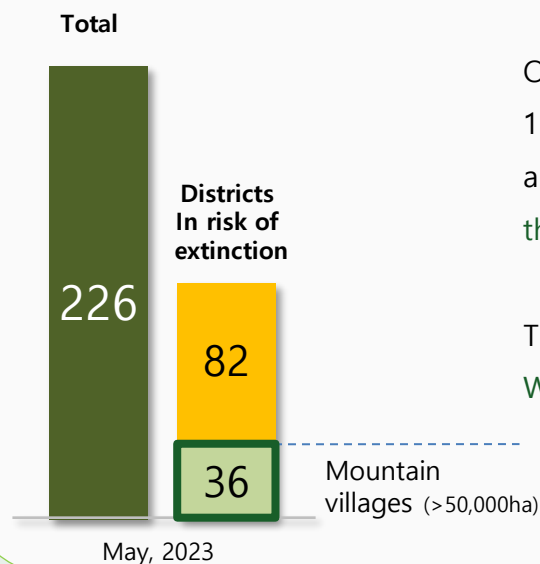
Governance

Forest Carbon



The IPCC emphasizes the importance of the role of forests to reach to 'Net-Zero' and move towards 'Carbon Negative'.

Local Economy



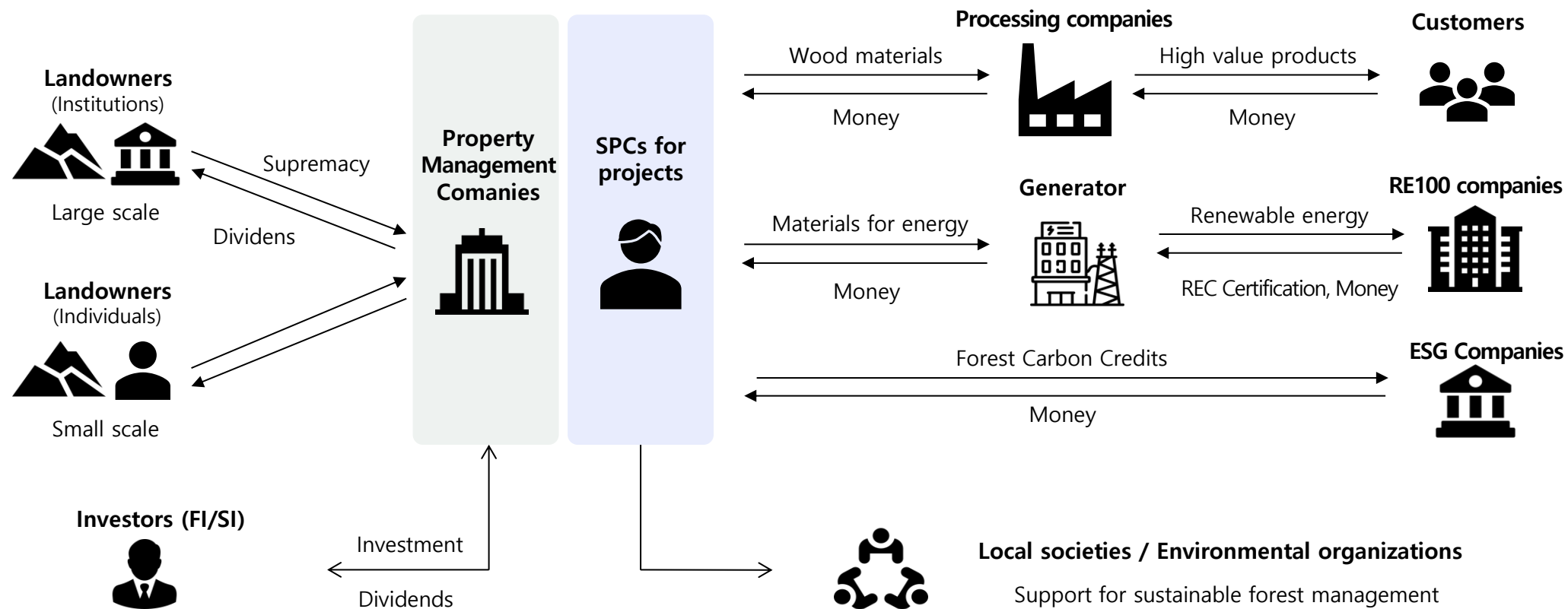
Out of 226 administrative units(districts), 118 districts (52%) are in danger of extinction, among which 36 mountain villages have more than 50 thousands hectares.

Through utilizing abundant forest resources, We can revitalize the local economy.

(Future) Development forest projects by introducing finance

Manage forests on a regional scale through 'Forest Project' and establish a value chain in a region to expand forest carbon offset credit, renewable energy (forest biomass, etc.), and RE100.

Operating schematic diagram



Thank you

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