



“Re-greening DPR Korea”

XV World Forestry Congress

Organized by the Korea Forest Service &
The UN Food and Agriculture Organization

at **Coex, Seoul**, Republic of Korea

May 02 – 06, 2022

Event: International Dry lands Greening Network

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Re-greening..!

Re-green is to make green again

- **to restore** (barren, degraded, or deforested land)
- **to a healthy ecological state** by planting vegetation (such as **trees, shrubs, grasses, or sustainable crops**)
- often in conjunction with **improvements in soil fertility and water retention**



The Problem

Deforestation and forest degradation are integrated with the issues of **poverty, food insecurity, climate change, and biodiversity loss**, and

- they continue to persist as a **primary political, social, and environmental challenge** in the Democratic People's Republic of Korea (DPRK).





The Problem

Per diverse sources, the rate at which forests are cleared off or degraded is confusing in DPRK.

According to the Global Forest Resource Assessment by FAO (FRA, 2010), the data indicate a rapid decline in forest cover,

- **from 8.20 million hectares in 1990 to 5.67 million hectares in 2010,**
- **representing a deforestation rate of more than 2% per year, and**
- **a decline in growing stock from 526 to 330 million m³,**
- **at an approximate rate of 3% per year over the past two decades.**



Re-greening Plans

The DPRK makes its effort to ensure conservation restoration and sustainable use of territorial and inland freshwater ecosystems,

- in particular **forests, wet lands, mountains and dry lands,**

in line with obligations under the international agreements including

- the **United Nations Framework Convention on Climate Change,**
- the **United Nations Convention on Biodiversity** and
- the **United Nations Convention on Prevention of Desertification.**



United Nations Framework
Convention on Climate Change



Convention on
Biological Diversity



United Nations
Convention to Combat
Desertification



Re-greening Plans

The DPRK gives priority to achieve forest recovery targets - 2015-2024:

- To **afforest about 1.4 million ha of mountain by 2024**, thus greening most of deforested mountains.
- **Create GHG emission reduction capacity of more than 10 million tons per annum.**
- The central and provincial tree nurseries should produce saplings on a **scientific, industrialized and intensified basis** and achieve the target, pushing forward afforestation and protection simultaneously.





Re-greening Plans

- By 2025, to regularly **investigate, monitor and evaluate biodiversity**
- surveys and researches on **natural succession of forest ecosystems**; and
- Introduce **environment friendly methods and technologies** including
 - **cyclic felling method,**
 - **forest and agriculture compound management and**
 - **organic farming system**



Re-greening Plans

Since the 1990s (FAO), 12% of the forests in DPR Korea have been cleared

- Forest and **Landscape Restoration (FLR)** programs run by UN FAO has selected DPRK as a benefi



THE GLOBAL
PARTNERSHIP
ON FOREST AND
LANDSCAPE
RESTORATION





Re-greening Plans

With support, from the FAO and Swiss Development Agency, DPRK declared in 2013 that:

- **Agroforestry** should be vigorously promoted to restore the forests and degraded lands
- And to reclaim land with **slopes < 15°** and afforest land on **slopes > 15°** in the mountain region for Agroforestry.
- Considers forest-related policies critical and considered it as a “**forest restoration battle**”

The “National Agroforestry Strategy and Action Plan (2015–2024)” (NASAP) was also developed in 2015 to implement this policy.





Re-greening Plans

Under the **National Forest Development Perspective Strategy (2015–2024)**,

- a **10-year National Forest Restoration Plan (NFRP)** was also developed.

The goal of this 10-year NFRP is **to restore 1.68 million ha** of deforested and degraded forest lands.



Re-greening Efforts

In DPRK, re-greening efforts are driven by

- the **Forestry Bureau under the Ministry of Land and Environmental Protection**.
- The **military** also plays a significant role;
- **Central Tree Nursery, Kangwon Provincial Tree Farm**, and the Tree Nursery 122 of the KPA are the largest nurseries;
- More than **26 millions of tree saplings** are produced every year;
- Holds more than **70 species of trees** till late 2017;
- Plans to construct **20 million capacity nursery** in each province



Re-greening Efforts

As a mass movement “**The forest recovery campaign**” was declared in **2015**

March 02nd is marked as “**Tree Planting Day**”, when people across the country plant trees.

- in **decreasing non-forest tree land area from 10.6% in 2010 to 5.5% in 2019** and
- **Increasing the forest tree land area by 1.7% at an annual average between 2015 and 2020.**

But no data available to substantiate though

2022.03.11 1:09pm



Kim Jong Un shown at a tree planting event on Mar. 02, 2022.

(Rodong Sinmun - News1)

Re-greening Efforts

FAO through several projects in various provinces has supported in building erosion control support structures:

- Gully check dams
- Stone terraces
- Riparian works /embankment along creeks





Re-greening Efforts

FAO has also supported in

- **Constructing tree nurseries,**
- **Demonstrated 11 Agroforestry models,**
- **Green houses for forest trees and other food producing vegetation**

Supported in production of **1 795 000** tree seedlings in nurseries.

Transplanted on the mountain slopes of (Wonsang-ri, Bosok-ri and Pyonghwa-ri).



Re-greening Efforts

FAO supported in production of **major crops** like maize, soybean, potato, peanut, red pepper and in the **agroforestry lands**.

Vegetables like Korean cabbage; cabbage, red pepper and cucumber parsley, chilies, onion, garlic, lettuce, local green leafy vegetables and others were produced **in greenhouses**.



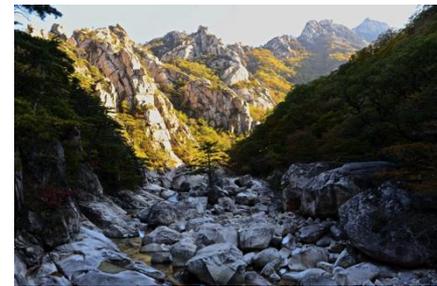
Re-greening Efforts

- The biosphere reserves are increased. The ratio of biosphere reserve area was 4.6% in 2015.

Mt. Paektu (1989), Mt. Kuwol (2004), Mt. Myohyang (2009), Mt. Chilbo (2014) and Mt. Kumgang (2018), the most famous mountains in DPRK have been designated for inclusion in the World Network of

In Biosphere Reserves;

- the cycling felling method, agroforestry, farming and livestock production cycle and other sustainable farming and advanced management methods are actively introduced.





Re-greening Efforts

The mountain green cover rate was 89% in 2015.

Satellite analysis in 2019 indicated

- forests accounted for **45%**,
- farmland for **27%** and
- grasslands for **13%**.



Re-greening Efforts

Classification of land cover and deforested areas using **phenological characteristics**:

- derived a **total of 2.6 million ha of afforestation sites**, which were graded to enable effective afforestation and forest restoration. (Joon Kim et.al.,2021. Phenological Classification Using Deep Learning and the Sentinel-2 Satellite to Identify Priority Afforestation Sites in North Korea)

Although DPR Korea puts major efforts on afforestation, its rate of deforestation is much faster than afforestation.

- Documentations and publishing the data is little for substantiating the claims.



Figure 2. Afforestation site in North Korea (39°01'35.58"N, 126°07'12.43"E): (a) May 2011; and (b) April 2019.

A small area in
Pyongyang city
May 2011-April 2019

Greenery Scenario

Near Kaesong Industrial Complex, dry crop fields on the hill slope were reforested along the horizontal stripes in Figure 1

In **Chonha-dong, Kaesong**, the **desolated slopes** were reforested in horizontal stripes as late as **September 2016**, and by **October 2020**, the slopes had significant **tree coverage**.

(Bruce Songhak Chung And Samantha J. Pitz May 19, 2021)

Figure 1. Reforested hillslope in Chonha-dong, Kaesong.



*Location: 37°59'38.24"N, 126°39'25.39"E;
Images: Google Earth, annotation by 38 North. For media licensing options, please contact thirtyeightnorth@gmail.com.*

Greenery Scenario

Bedrock outcrops were reforested in Figure 2.

About 10 kilometers away, bedrock outcrops in Sambong-ri were visibly reforested in October 2016 and considerable progress was made by September 2017 to now a much fuller forest.

Figure 2. Reforested bedrock outcrops in Sambong-ri, Kaesong.



*Location: 37°54'55.63"N, 126°35'52.30"E;
Images: Google Earth, annotation by 38
North. For media licensing options, please
contact thirtyeightnorth@gmail.com.*

Greenery Scenario

In 2012, the government ordered residents **not to reclaim** the hillsides with **slopes exceeding 15 degrees** to help prevent erosion and landslides (Song et al. 2017).

- Before May 2019, large patch fields on **steep slopes in Jagang Province near Manpho** were **reforested** with probable **coniferous trees**.

However, the **local communities, lost arable lands** that previously enabled them to grow food and increase their self-sustenance.

Figure 5. Reforested patch fields on the steep slopes in Songha-ri, Jagang Province.



*Location: 41°12'32.74"N, 126°28'50.57"E;
Images: Google Earth, annotation by 38
North. For media licensing options, please
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Threats to Re-greening

Re-greening efforts have not been easy.

- **Soil erosion** remains a big threat.
- **Heavy rains turn mountain streams** into caramel-colored torrents that **wash away valuable soil and choke downstream** river systems.
- The precarious **humanitarian situation** also poses severe constraints.
- **Wood** still constitutes the **primary fuel for cooking and heating** in rural areas.
- Farmers officially **deterred from cultivating land sloping more than 15 degrees**, conservation efforts may collide (or even unravel) with the **need for increased food production** on the limited land available.

Threats to Re-greening

Effective forest management and protection, furthermore, requires significant **human, financial, and material resources** that are in short supply.

- **UN sanctions** are making it difficult to pursue a **renewable energy strategy**.

Sanctions have **banned imports of solar panels** since 2017, while supplies of **copper wire and other basic materials** needed for **wind generators** have also been affected





What is NEXT?

Re-greening of a country plays a crucial role in meeting multiple objectives on climate change, biodiversity, action against desertification and sustainable development.

DPR Korea should achieve amidst all odds.

Thank you

