# 2017 implementation plan for expansion of erosion control works focusing on living spheres in Korea

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## 1. Introduction

Several characteristics of South Korea make it extremely vulnerable to landslides. The mountain slopes are very steep and, soil cohesion is low, as the soil mostly consists of sandy loam made by weathering of granites and gneisses. Mean annual precipitation ranges from 1,300 mm to 1,500 mm and every years' precipitation is mostly concentrated in summer. Especially considering the recent changes in weather patterns due to climate change and landslide damage around the world including Japan and China, continuous preventive measures are required, as the incidence of landslides due to the localized torrential rain is expected to increase in the future (Korea Forest Service 2016). Therefore, the Korea Forest Service plans to carry out erosion control works in 2017 based on the following key policies: 1) the establishment of landslide prevention infrastructure; 2) the establishment of a landslide prevention and response system; 3) the accuracy enhancement of landslide prediction information; 4) the erosion control works and maintenance focused on landslide-vulnerable areas; and 5) the investigation and recovery of landslide-affected area and establishment of a response system against earthquake-induced landslides (Korea Forest Service 2017).

## 2. The cost and volume of erosion control works

Erosion control works in 2017 should be completed prior to the rainy season in order to prevent humans from landslides and to minimize landslide damages. The total budget for the works is 302,191 million won (232,872 million won from national expenditure and 69,319 million won from local expenditure) (Table 1).

Table 1. Detailed summary of erosion control works in 2017

| Name of work | Scale | Name of work | Scale | Name of work | Scale |
|---|---|---|---|---|---|
| Mountain erosion control | 222 ha | Stream conservation works | 460 km | Erosion control dams | 688 sites |
| Check of erosion control dam and facility | 523 sites | Coastal disaster prevention forests | 40 ha | Restoration of coastal erosion area | 15 km |
| Forest watershed management | 4 sites | | | | |
| Total budget : 302,191 million won (232,872 million won from national expenditure and 69,319 million won from local expenditure) | | | | | |

## 3. Detailed implementation plan

### 3.1. Establishment of landslide prevention infrastructure

We aim to establish law and regulation for making safe territory against landslides, and to expand expertise by strengthening education, promotion and international cooperation related to landslide prevention. In order to achieve these goals, we will improve landslide prevention measures such as law and regulation, strengthen response capabilities and maximize the education effect by subdividing education plan by field, purpose and subject. In addition, we will provide more public information to promote a culture of landslide safety and strengthen international cooperation in landslide prevention field. The implementation schedule is as follows. We will conduct landslide prevention personnel training in January; hold a seminar for nationwide landslide prevention and response and meetings with the officials of relevant organizations and groups in May and June, respectively; and hold the 40th nationwide landslide prevention workshop in December.

### 3.2. Strengthening of a landslide prevention and response system

We aim to establish a safety network against landslide disasters by strengthening response capabilities and on-site prevention, with a focus on landslide vulnerable areas. In order to achieve these goals, we will build a

prompt response system and step-by-step prevention scheme for landslide emergency response, perform investigations of areas of concern, and pursue designation and management of vulnerable areas. We also plan to enhance the stability and on-site utilization of the landslide information system. In addition, we will expand the number of the landslide prevention and response specialists that focus on on-site services, establish a system of collaboration with relevant organizations for landslide emergency response, and advance preventative measures for winter forest disasters. The implementation schedule is as follows: February, establish countermeasures for the thawing season landslide safety surveillance; May to June, run simulation training for landslide and for the landslide prevention support center; and October, implement prevention measures for forest disasters in winter.

### 3.3. Accuracy enhancement of landslide prediction information

We aim to induce active evacuation of residents by accurate prediction of landslide occurrence and to run landslide information system for effective response to landslide. To achieve this goal, we will plan to; implement structural and non-structural measures for landslide; improve field utilization of landslide information system and accuracy of prediction information; and establish a system of collaboration with relevant organizations for landslide emergency response. The implementation schedule is as follows: March, establish the long-term plan for establishment of landslide information system and mountain weather observation networks; October, install sub-mountain weather network (10 sites).

### 3.4. Erosion control works and maintenance focused on landslide vulnerable areas

We aim to complete erosion control works prior to the rainy season in order to prevent loss of human life from landslides and to minimize landslide damages. To achieve this goal, we will establish basic plan of erosion control work for transition to forest watershed management system, focus intensively on landslide vulnerable areas for the implementation of the erosion control works and conduct to design and construct considering environment. In addition, we will plan to; implement coastal erosion works to prevent damage of tsunami and coastal erosion; strengthen maintenance such as systematic check of erosion control facilities and structural improvement; and reinforce field technology to improve the quality of erosion control works. The implementation schedule is as follows: February, conduct the field workshop for hands-on workers of erosion control projects; March to June, field supervision and guidance for the design and construction of the erosion control works as well as establishing a field advisory panel for the works; September, select the designated regions for the erosion control work quality contest.

### 3.5. Investigation and recovery of landslide-affected areas and establishment of a response system against earthquake-induced landslides

We aim to conduct prompt and precise investigations of landslide causes and damage, and to establish response system against earthquake-induced landslides in order to create a safe living environment. In order to achieve these goals, we plan to establish a prompt and precise investigation system for landslide-affected areas, to establish risk management response system against earthquake-induced landslides, and to ensure investigation and permanent recovery of landslide-affected areas. In addition, we will plan to strengthen assessment about emergency response system to landslides and follow-up management of landslide recovery areas. The main implementation schedules are as follows. We will make a practical manual for risk response of earthquake disaster in January–June, conduct monitoring for safety of landslide recovery areas in April–May, and convene a “technical expert panel for landslide cause investigation” in May to November.

### References

Korea Forest Service. 2016. 2016 annual report on forests and forestry trends. pp. 446.

Korea Forest Service. 2017. 2017 implementation plan for preventing landslides. pp. 390.

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