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## VIET NAM APPLIES *SMART* IN FOREST PROTECTION AND BIODIVERSITY MONITORING

"The Spatial Monitoring and Reporting Tool (SMART) is a tool officially employed by Xuan Lien Nature Reserve in patrolling to protect forests and monitor biodiversity," explains Mr. Tam – Director of Xuan Lien Nature Reserve. He added, "The management of Xuan Lien Nature Reserve has been greatly improved since SMART's application. Specifically, SMART has helped us, the leaders, assess the patrolling performance of each staff member in a more transparent and objective manner. As a result, higher effectiveness has been seen in forest management and protection while forest biodiversity has also been monitored more meticulously and accurately."

On a total area of 24,728 hectares of which nearly 4,000 hectares are primary forest land, Xuan Lien Nature Reserve is home to many precious and rare plant species, thousand-year-old trees, and some unique and symbolic animal species such as the northern white-cheeked gibbon, Phayre's langur and Roosevelt's muntjac — whose genetic resource is in need of conservation and development.

Currently, the management board of Xuan Lien Nature Reserve is staffed by 33 people including public employees, civil servants, and contractual workers who are directly involved in protecting forests and biodiversity.

Responding to the question about the patrolling and monitorization performance of forest rangers before the introduction of the SMART application, Mr. Tam said, "Before the application of SMART Mobile, Xuan Lien Nature Reserve used GPS trackers in forest patrolling and biodiversity monitoring. Once collected, information about points, routes, and human impacts observed during patrols were manually entered into the SMART computer-based database; however, this approach was very time-consuming and lacked objectivity, while at the same time the data entry process was prone to errors."

SMART is a combination of software, training materials and implementation standards to support a broad range of conservation activities. It is internationally recognized and allows for a harmonized monitoring approach and tailor-made data collection and analyses to support management decisions in and around protected areas.

Since 2016, the German Development Cooperation (GIZ) in cooperation with the Viet Nam Forestry Administration and other stakeholders under the "Conservation and sustainable use of forest biodiversity and ecosystem services in Viet Nam" (referred to as the BIO project) has worked toward standardizing the SMART data model and introducing manuals for the application of SMART throughout the entire system of

national parks and protected areas. Through the support of this project, Xuan Lien Nature Reserve has received capacity development measures for management board staff, and also necessary equipment, including: 03 computer sets, 08 Nikon digital cameras, 21 smartphones, binoculars, hard disk drives, GPSs ...

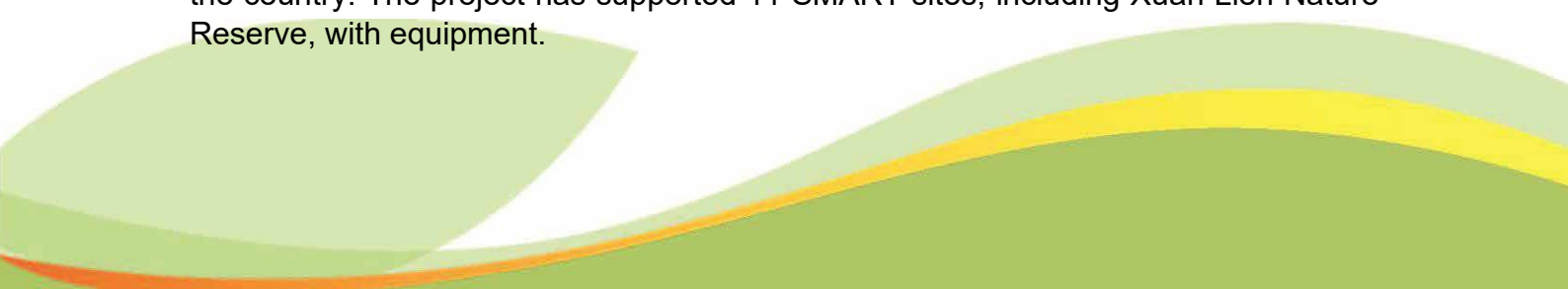
Mr. Tam commented, "SMART Mobile software is one of the very important tools in patrolling to protect forests. It is a breakthrough innovation for our management and steering... As the software can run on a personal smartphone, it is very user-friendly." Moreover, "The reporting features are more effective, accurate, and comprehensively informative while the procedure in importing and exporting reports is much faster and simpler. With almost all operations being automated by the system, higher objectivity in management is also ensured. Since the application of SMART, forest patrolling and biodiversity monitoring have been planned and adapted more effectively and timely." said Mr. Tam.

Viet Nam currently has approximately 14.7 million hectares of forest corresponding to a forest coverage of roughly 42%. Being part of the Viet Nam forests, the special-use forest system – one type of protected forest sector – currently consists of 167 management boards of the special-use forest, covering an area of about 2.4 million hectares. The Department of Protected Area Management (DOPAM) is a managerial body with a very limited number of staff, yet they are tasked with collecting, consolidating, and processing data manually, which has understandably resulted in discreteness and fragmentation in the exchange of information, reports, and data communications between the forest management boards and governmental agencies. Consequently, this has made the timely decision-making process more challenging.

To address these issues, the Prime Minister of Viet Nam approved a decision to ratify three solutions of the National Capacity Development in 2017. The SMART initiative contributes to the third solution which is related to the development of an online reporting system. This system was envisioned to improve the monitoring and reporting mechanisms of forest patrolling and protection, biodiversity monitoring, and law enforcement. Within this frame, SMART is recognized as an effective tool to support more informed decision-making and management of protected areas.

Nowadays, across the globe, SMART is known as an effective tool continuously undergoing development with its application highly encouraged by many conservation experts in order to improve the monitoring and reporting of information needed to optimally manage protected forests. Since the launch of the first SMART version in 2013, GIZ and partners have supported the application of SMART in Viet Nam. However, the past eight years of SMART's implementation have seen the application vary from site to site and – more often than not – be employed at a small scale, mainly in the project areas of various conservation organizations.

The BIO project has contributed to the national SMART roll-out and standardization of SMART use in Viet Nam in 2021: The standardized data model, national guideline and training curriculum are ready to be applied in the 33 sites currently using SMART in the country. The project has supported 11 SMART sites, including Xuan Lien Nature Reserve, with equipment.



## SPATIAL MONITORING AND REPORTING TOOL: SMART

- **Standardised SMART data model** ready to be applied in all protected areas in Viet Nam 2022
- **Training** on the most updated SMART version and standardized data model
- 09 Protected areas supported with full set of **SMART equipment** and 02 protected areas with smart phones
- **SMART network** and cooperation strengthened



220 Smart phones



240 Binoculars



**Technical manuals**  
for equipment deployment  
Full set of **SMART manuals**  
available in Vietnamese



27 Computers  
(laptop + desktop)



111 Cameras



104 GPS

Programme on Conservation, Sustainable Use of Forest Biodiversity and Ecosystem Services in Viet Nam

Furthermore, a SMART "training for trainers" (TOT) was organized with the attendance of 28 trainees, including one official from DOPAM and 27 officials from conservation organizations and protected forests. After the TOT, trainees have and will continue to receive technical support from SMART experts to effectively implement the knowledge gained from the course at their sites.



*Forest rangers of Xuan Lien Nature Reserve during a conservation of terrestrial tortoises study project. Photo credit: ©CCD/ Le Thanh An*





*Xuan Lien Nature Reserve's technical staff entering data collected from patrols into SMART software. Photo credit: ©CCD/ Le Thanh An*

"In 2021, the standard SMART data model and a set of technical manuals were available for VNFOREST to implement the SMART nationwide rollout." delightfully announced Mr. Doan Hoai Nam, DOPAM's Director. Mr. Nam also expressed his deep appreciation to the German Government in their support of this complex implementation process by GIZ and other stakeholders through their many years of SMART piloting, a series of technical meetings, and their capacity development measures.

Mr. Nam added that in July 2022, VNFOREST issued the SMART application guidelines for protected forests. The publication of the decision by VNFOREST to advise on the standardized implementation of SMART is a great step towards a simple and user-friendly deployment of SMART while ensuring all basic data collection requirements. Now, all SMART documents have also been posted on the VNFOREST portal, easily accessible to any interested organizations and/or individuals.

"With SMART being applied nationwide in a synchronous and uniformed manner, a national database on forest resources and biodiversity will be established. The management and monitoring of nature resources and biodiversity from the central to grassroots levels by administration agencies will thereby be better-informed, promoting sustainable forest management — contributing to reducing greenhouse gas emissions caused by deforestation and forest degradation and to the realization of the common objectives of COP 26," Mr. Nam commented.

According to Mr. Nam, as the next steps, DOPAM will coordinate with GIZ and other stakeholders to regularly update the current data model in line with the international

standard, to introduce and roll out the SMART application across the entire system of protected forests in Viet Nam. In parallel, the operational framework of the SMART network will also be finalized in order to accelerate the official establishment of this network and strengthen cooperation and exchange of SMART-related issues among management boards of protected forests in Viet Nam.



*Group photo of the 5<sup>th</sup> SMART network meeting held in August 2022 – Da Nang.*

*Photo credit: ©GIZ/Le Thanh An*

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