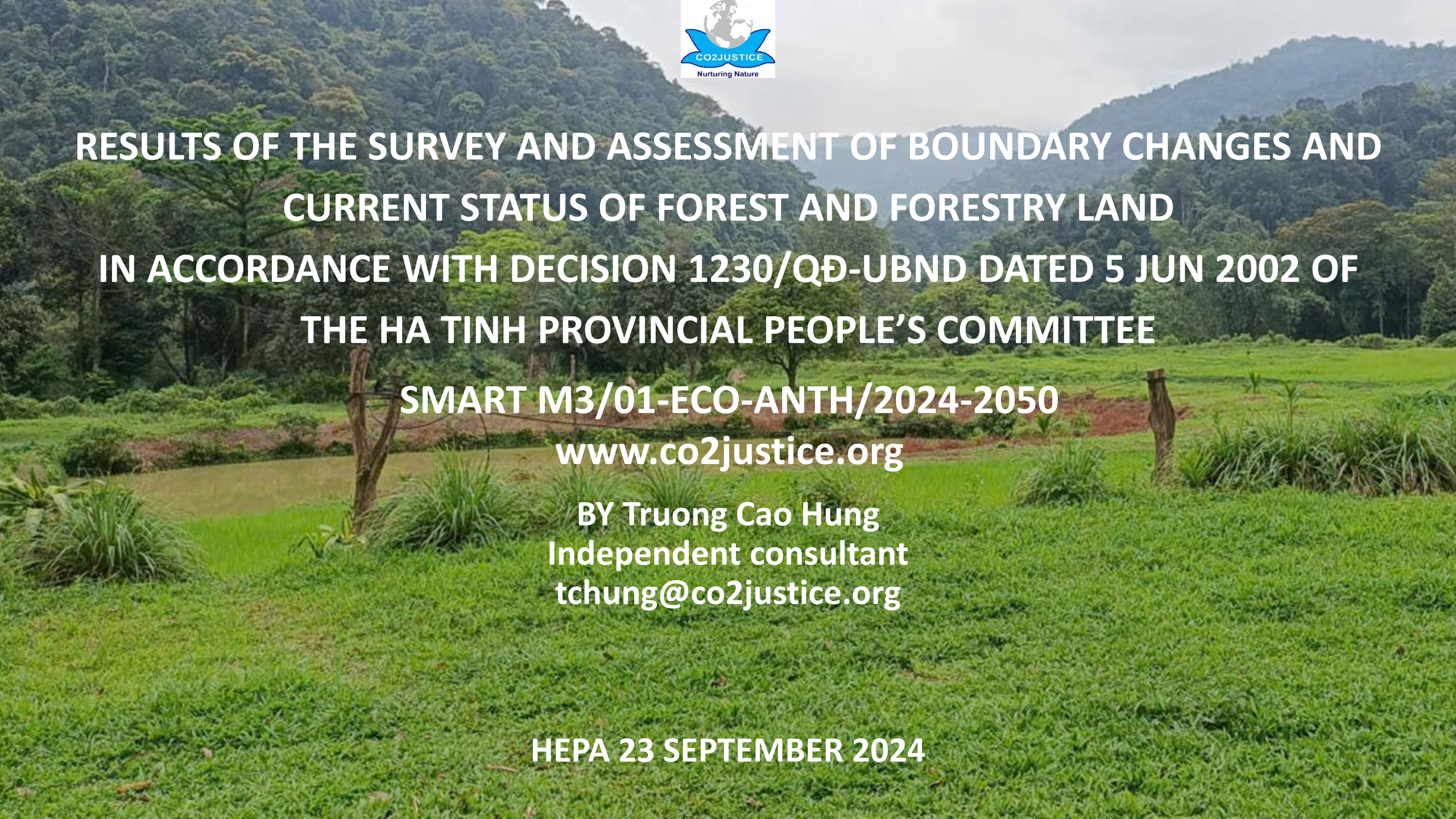

RESULTS OF THE SURVEY AND ASSESSMENT OF BOUNDARY CHANGES AND CURRENT STATUS OF FOREST AND FORESTRY LAND IN ACCORDANCE WITH DECISION 1230/QĐ-UBND DATED 5 JUN 2002 OF THE HA TINH PROVINCIAL PEOPLE'S COMMITTEE

SMART M3/01-ECO-ANTH/2024-2050

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HEPA 23 SEPTEMBER 2024

LEGAL BASIS

Legal document	Document's No
Law	- Land Law 31/2024/QH15 of the Vietnam National Assembly - Forest Law 16/2017/QH14 of the Vietnam National Assembly
Decree	- 102/2024/NĐ-CP of the Government elaborating the Land Law - 156/2018/NĐ-CP of the Government elaborating the Forest Law (amended and supplemented in Decree 91/2024/NĐ-CP) - 06/2022/NĐ-CP of the Government on mitigation of GHG emissions and protection of ozone layer
Circular	- 08/2024/TT-BTNMT of MoNRE on statistics, inventory and mapping of the land use current status - 31/2018/TT-BNNPTNT of MARD on forest boundaries determination - 33/2018/TT-BNNPTNT of MARD on forest survey, inventory and monitoring (amended and supplemented in Circular 16/2023/TT-BNNPTNT) - 23/2023/TT-BNNPTNT of MARD on measurement, reporting and verification of results of GHG emission mitigation in the forest sector.
	- 1230/QĐUB-NL3 on CHESH's Land Use Rights Certificate

OBJECTIVES

1. Have a map and database system that complies with current legal requirements for forest owners
2. Inventory and calculation of timber volume, carbon stock, and CO_2 equivalent conversion
3. Identify positive changes
4. Identify negative changes

METHODOLOGY

- Forest field survey and forest status verification with forest owners
- Inventory by standard plots and boundary markers identified by forest owners
- Application of GPS technology
- Interpretation of satellite image (Landsat 9 and Sentinel 2)
- Software: Qgis, Arcgis, Mapinfo, Microstation and Cad.

PROCESS

- COMBINED INTERPRETATION OF SATTELITE IMAGE, FIELD SURVEY AND DATA VERIFICATION
- FIELD SURVEY OF BOUNDRARIES AND OBSERVATION OF FOREST STATUS
- INHERITANCE, INDEPENDENT AUDIT OF STANDARD PLOT INFORMATION AND BOUNDARIES AMONG FOREST OWNERS
- CALCULATIONS AND ANALYSIS
- FEEDBACK AND ACCURACY VERIFICATION AMONG FOREST OWNERS

INTERPRETATION OF SATELLITE IMAGE

Hi Boundaries

Standard plot location

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TECHNIQUE OF MEASUREMENT AND RECORDING OF STANDARD PLOT DATA






FIELD MEASUREMENT EQUIPMENT

Equipment	Specification	Photo
Handheld GPS unit	- Positional accuracy of ±2 m - Handheld GPS is preferred for forestry surveys due to its mobility and negligible positional error within the acceptable tolerance.	
Electronic theodolite	- Positioning accuracy of ±0.2 mm. - High accuracy but low mobility by the requirement for establishing a network of survey markers along the transmission line which is labor-intensive.	
Dual-frequency GPS unit	- Positional accuracy of ±2 cm, utilizing a Radio Base Station, a CORS station of the Department of Surveying and Mapping, or a private Base Station - High accuracy, good mobility, and low manpower requirements, but higher cost.	

FIELD SURVEY MEASUREMENT TOOLS

Type	Uses	Photo
Cloth tape measure (German technology)	Measuring tree circumference/diameter	
Diameter caliper	Measuring tree diameter	
Blume tape measure	Measuring tree height	
Tape measure	Measuring standard plot dimension	

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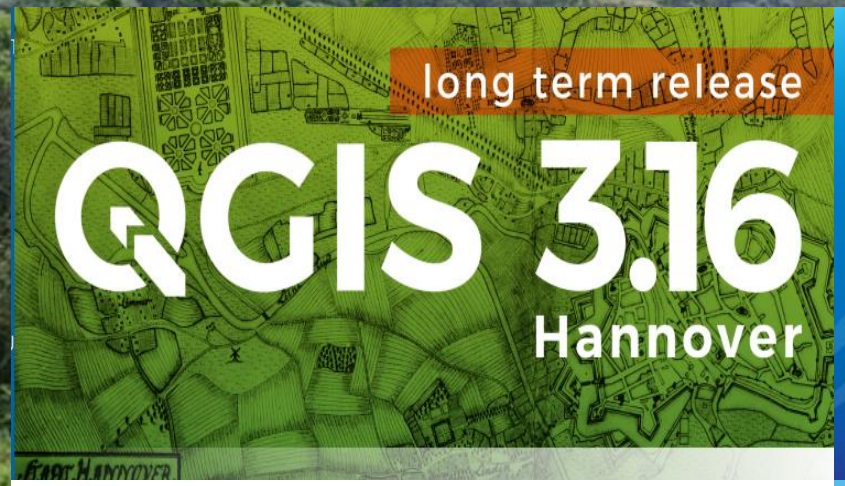
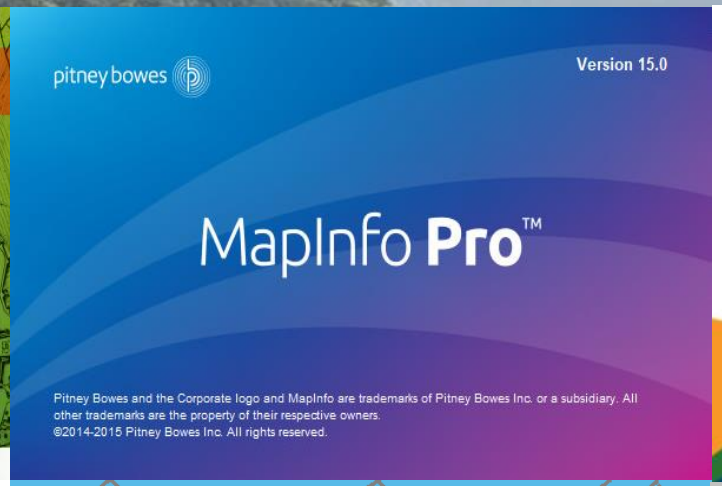
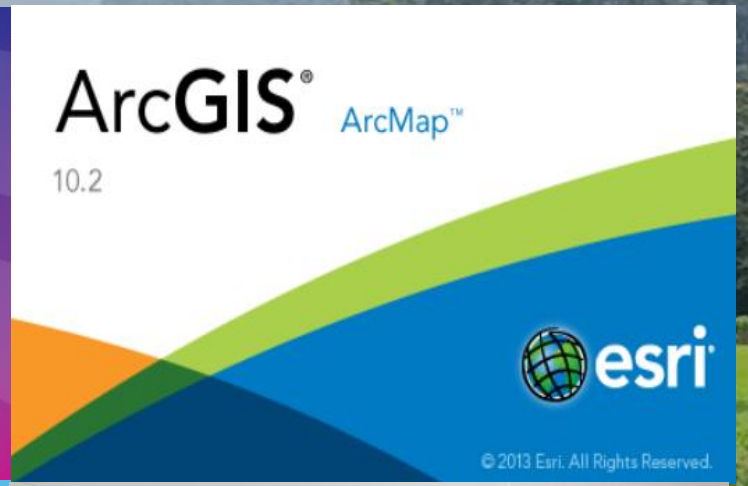
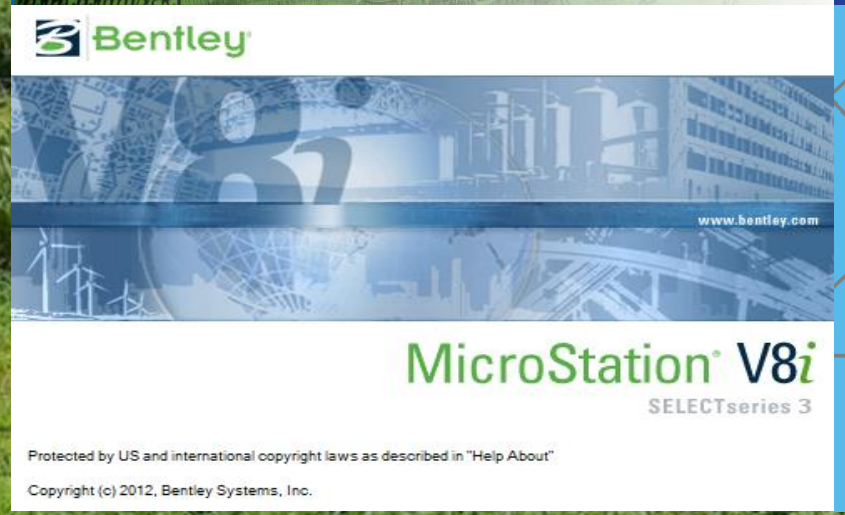
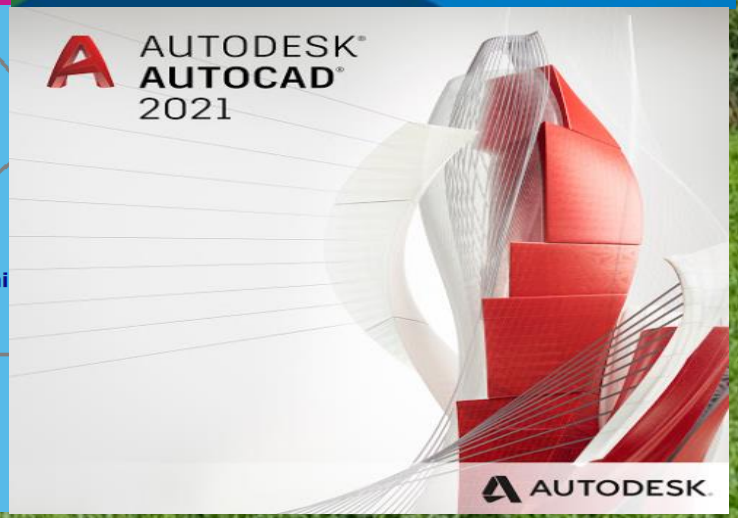
APPLIED TECHNOLOGY SOFTWARE





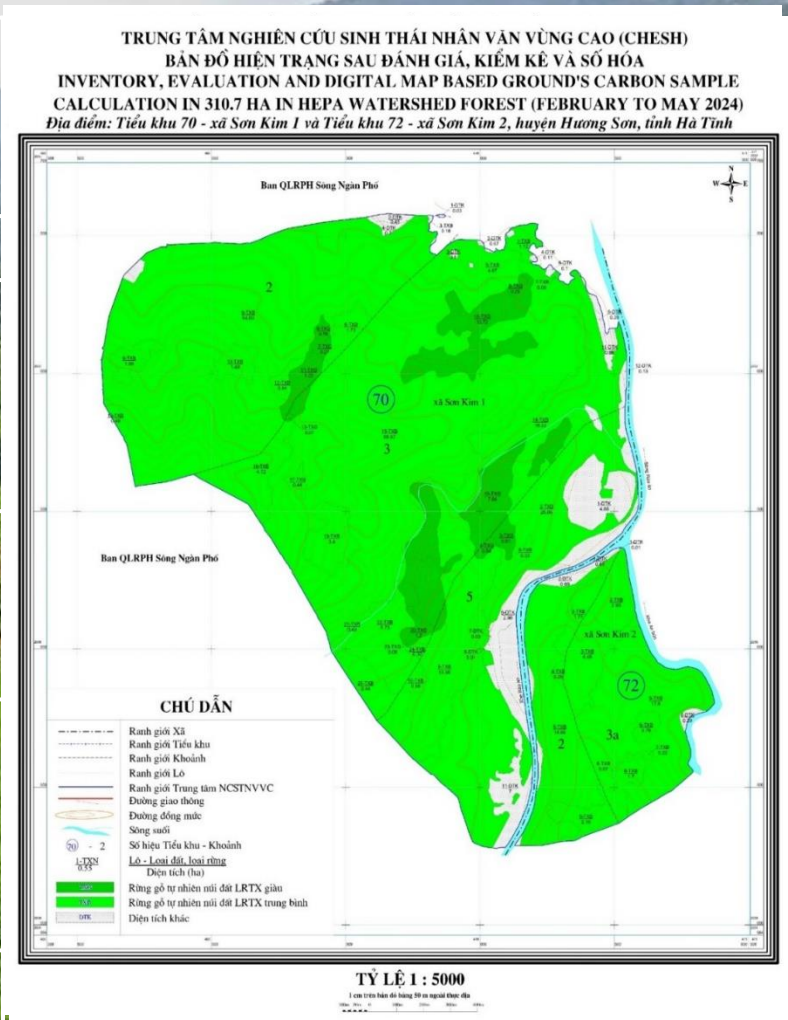






SURVEY RESULTS

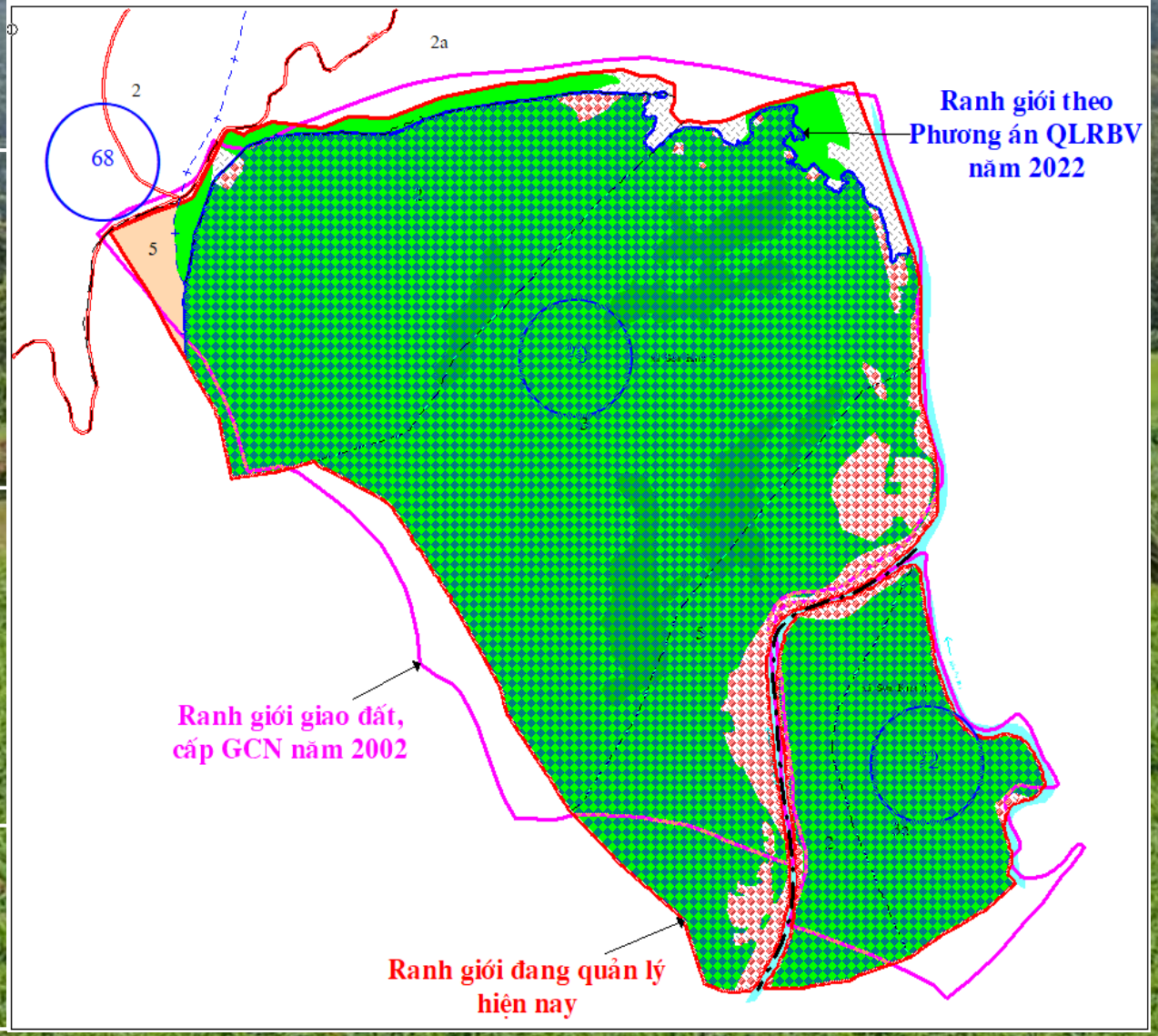
Location	- Plots 2, 3, 5 of sub-zone 70 within the territory of Son Kim 1 commune, Huong Son district, Ha Tinh province - Plots 2, 3a of sub-zone 72 within the territory of Son Kim 2 commune, Huong Son district, Ha Tinh province.
Total area	310.7 ha
Forest status/ Classification	- Area with natural forests: 291.38 ha (including natural mountain wood forests, rich evergreen broadleaf forests (TXG): 23.76 ha; and Natural mountain wood forests, medium evergreen broadleaf forests (TXB): 267.62 ha) - Non-forested area: 19.32 ha (Other area (DTK))
Functional planning of three forest categories	- Protection function: 179.40 ha - Production function: 131.30 ha
Timber volume	- Natural mountain wood forests, rich evergreen broadleaf forests (TXG): Average timber volume is 233.06 m^3/ha; Total timber volume is 5,537.50 m^3 - Natural mountain wood forests, medium evergreen broadleaf forests (TXB): Average timber volume is 149.11m^3/ha; Total timber volume is 39,904.79 m^3
Carbon stock, CO2 equivalent conversion	**- Total carbon stock in biomass (including both C_AGB and C_BGB) of the natural forest area of 291,38 ha:** **+ Average carbon stock is 110.67 tons of C per ha** **+ Total carbon stock is 32,247.02 tons of C** **- Total CO2 equivalent absorbed by the forest area mentioned above:** **+ Average absorbed CO2 equivalent is 406.16 tons of CO2-e per ha** **+ Total absorbed CO2 equivalent is118.346,90 tons of CO2-e**



DATA CHANGES

Timeline	Content	Area (ha)
2002	Decision 1230/2002 of Ha Tinh PPC on land allocation and granting of Land Use Rights Certificate	285.4
2022	Decision 1874/2022 on approval of sustainable forest management plan of Ha Tinh PPC	310.7
Present	Actual area managed as of present (2024)	328.5

MAP OF FOREST BOUNDARY AND STATUS CHANGES



SUBJECTIVE CHANGES

- Synchronous collaboration among earlier and later forest owners?!
- Field verification of surrounding boundaries among earlier and later forest owners?!
- Periodical monitoring of boundary changes among neighboring forest owners?!
- Annual collaboration assessment?!
- Regulation for coordination and collaboration among neighboring forest owners?!
- Continuity in forest co-governance from 2002- 2024?!

OBJECTIVE CHANGES

- Applied Projection in 2002?!
- Map technology in 2002?!
- Mapping skills in 2002?!
- Map system governance from 2002-2024?!
- Control of changes:
  - BOUNDARIES?!
  - AREA?!
  - PROCESS ?!
  - **THE LAND ALLOCATION CONTRACT FROM THE SUBSIDY PERIOD HAS EXPIRED AND THE CASE IS STILL PENDING?!**

RECOMMENDATIONS

- Having a meeting to share challenges among forest owners?!
- Presenting identified overlapping boundaries and areas!
- Reaching agreement on area data stated on boundary markers, maps, and digitalization using WEBGIS technology among forest owners?!
- Together building up co-management regulations similar to the period of 2002-2010?!

RECOMMENDATIONS

- Given the Land Use Right Certificate No. 1230/QD-UBND dated 5 June 2002, there is a need to FULLY SYNCHRONIZE all existing documents stored at the Department of Natural Resources and Environment, the Department of Agriculture and Rural Development, and the HA TINH PROVINCIAL PEOPLE'S COMMITTEE?!
- The Ha Tinh Provincial Department of Agriculture and Rural Development to chair a workshop on the “CO-MANAGEMENT MODEL AMONG FOREST OWNERS” of the NGAN PHO RIVER UPPER WATERSHED, towards a Green Economy & the NetZero 2050 Commitment?!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Thanks for your attention