Methodological approach to estimate carbon stock changes under REDD

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DEFINITIONS

- Degradation is a carbon loss in forest land remaining forest land to be assessed at national level

- The forest land remaining forest land area is the forest area not subject to land-use changes since the start of the reference period

CASE *a* :
COUNTRY WITH HISTORICAL CARBON STOCK DATA
e.g. India

Degradation is accounted as difference between the forest carbon stocks in forest land remaining forest land at two following point in time (e.g. 0 & 1):

Δ Carbon stock = (FL Carbon Stock at Time 1) - (FL Carbon Stock at Time 0)

FL = Forest Land

Thus the emission reduction is accounted as difference between net change in carbon stocks at reference and assessment period

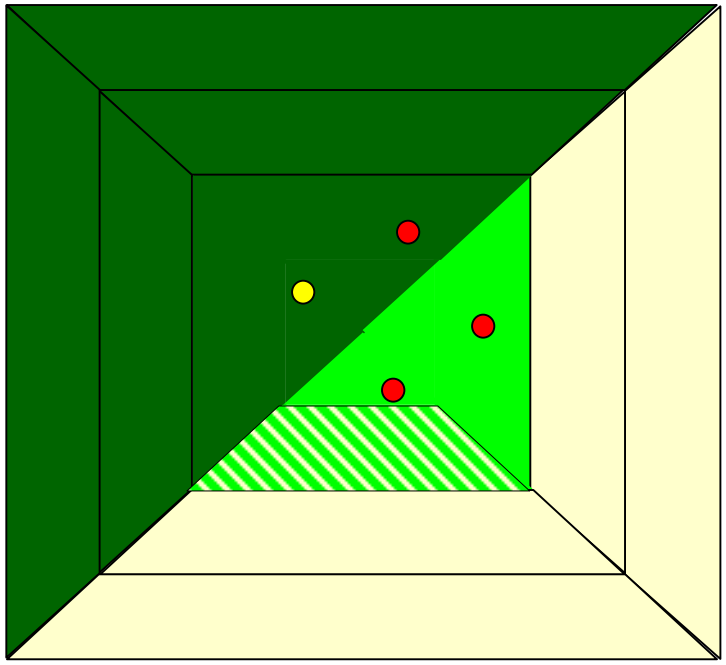
CASE *b*:

COUNTRY WITH NO HISTORICAL CARBON STOCK DATA

e.g. Papua New Guinea

LEGEND

In the following slides concepts will also be presented through graphical objects, please take few seconds to comprehend the legend



PRIMARY FOREST LAND

SECONDARY FOREST LAND

OTHER LAND USE

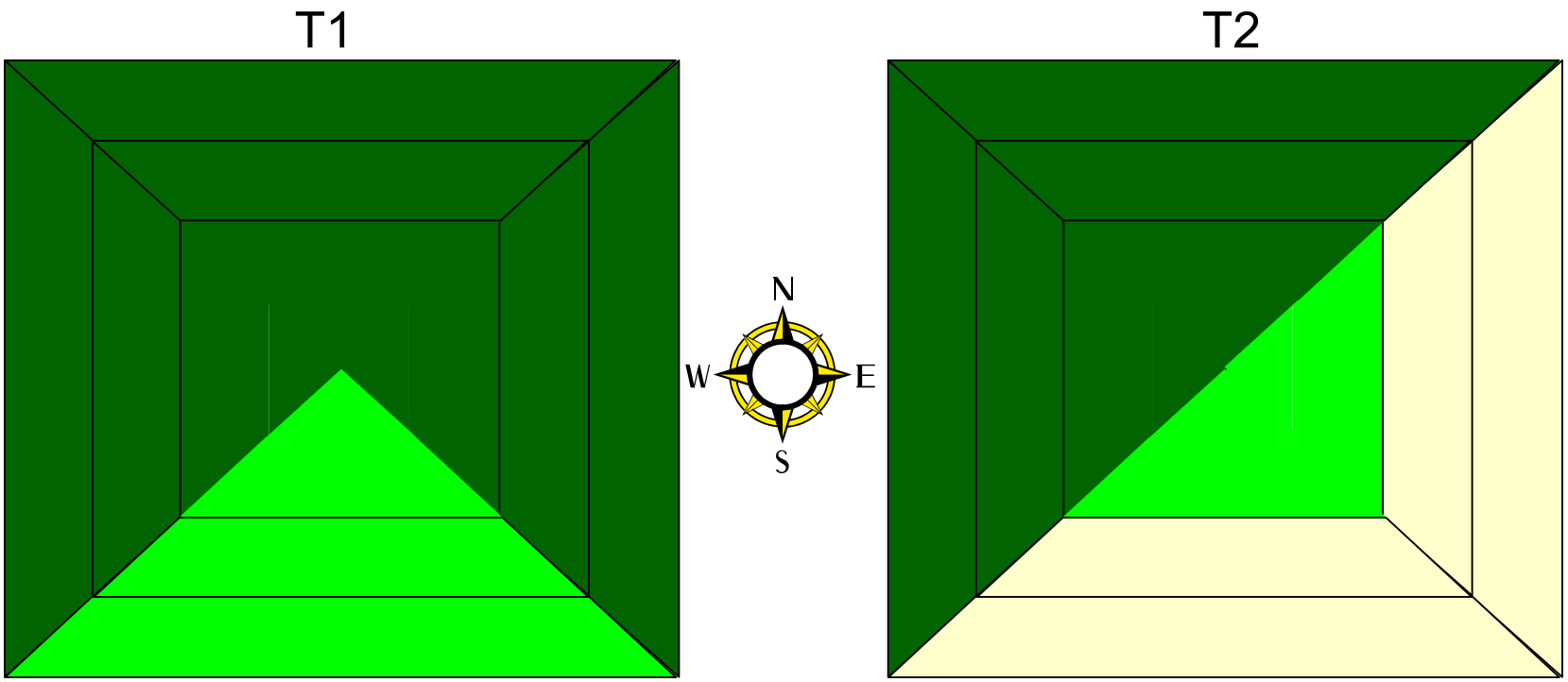
CHANGE IN CARBON STOCK

SAMPLING PLOT

NEW SAMPLING PLOT

- Primary forest land is used as synonymous of undisturbed, intact, un-managed forest land
- Secondary forest land is used as synonymous of human disturbed, non-intact, managed forest land

Activity data to be reported on forest land
in the **REFERENCE PERIOD**



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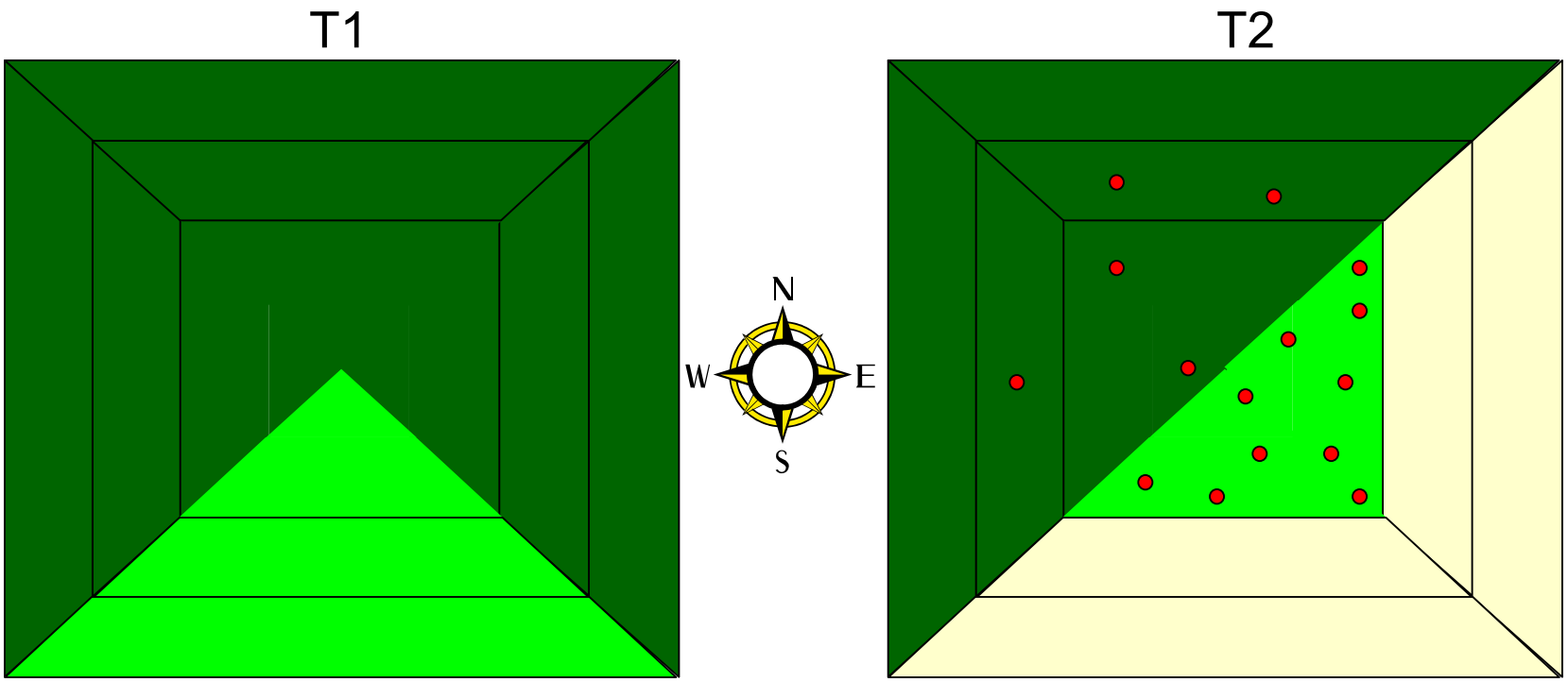
- deforestation of secondary forest land in the southern sector
- deforestation of primary forest land in the eastern sector
- degradation* from primary to secondary forest land in the eastern sector

This data could be globally retrieved from historical satellite earth observation data since 1990

* *(forest land remaining forest land)*

Carbon stock data to be reported on forest land

in the **REFERENCE PERIOD**



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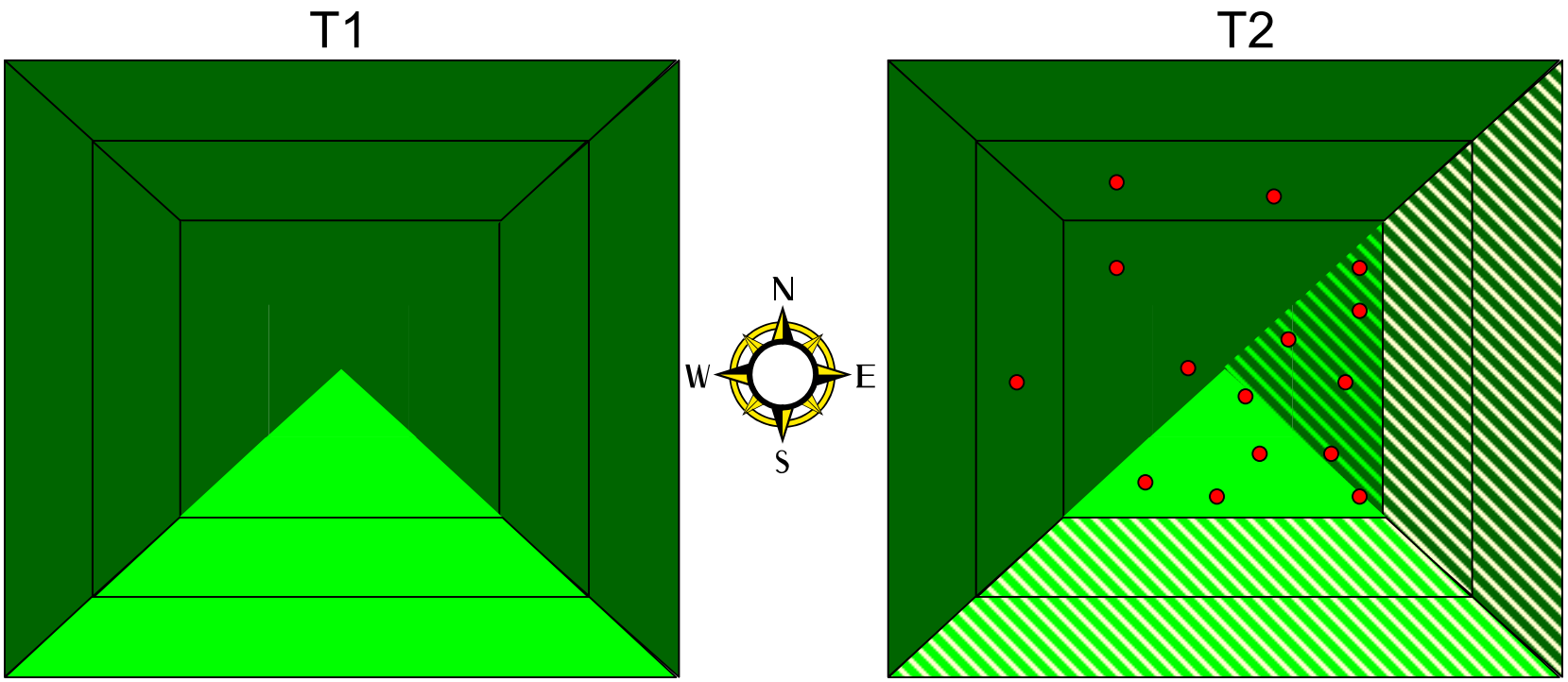
For countries which do not have national historical data on forest carbon stock, they will have to collect them before the beginning of the first assessment period. Each main forest types will be subdivided in two categories: primary and secondary. For each main forest type two field sampling designs will be established: one for the primary and one for the secondary forest land. Each sampling design should ensure carbon stock estimations with 5~10 % of uncertainty at 95 % CI.

Carbon stock changes to be reported on forest land
in the **REFERENCE PERIOD**



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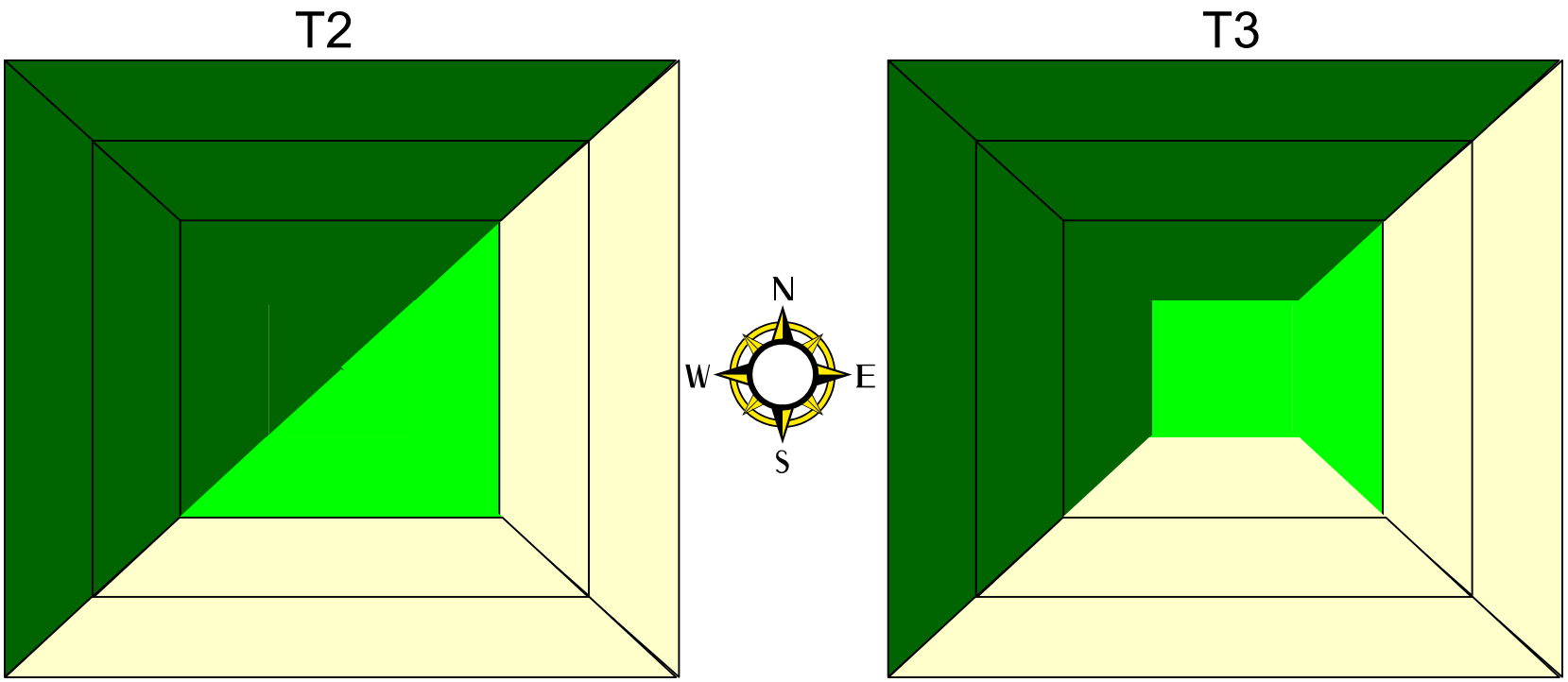
- carbon stock changes from deforestation of secondary forest land in the southern sector
- carbon stock changes from deforestation of primary forest land in the eastern sector
- carbon stock changes from forest degradation in the eastern sector

Activity data to be reported on forest land
in the **ASSESSMENT PERIOD**



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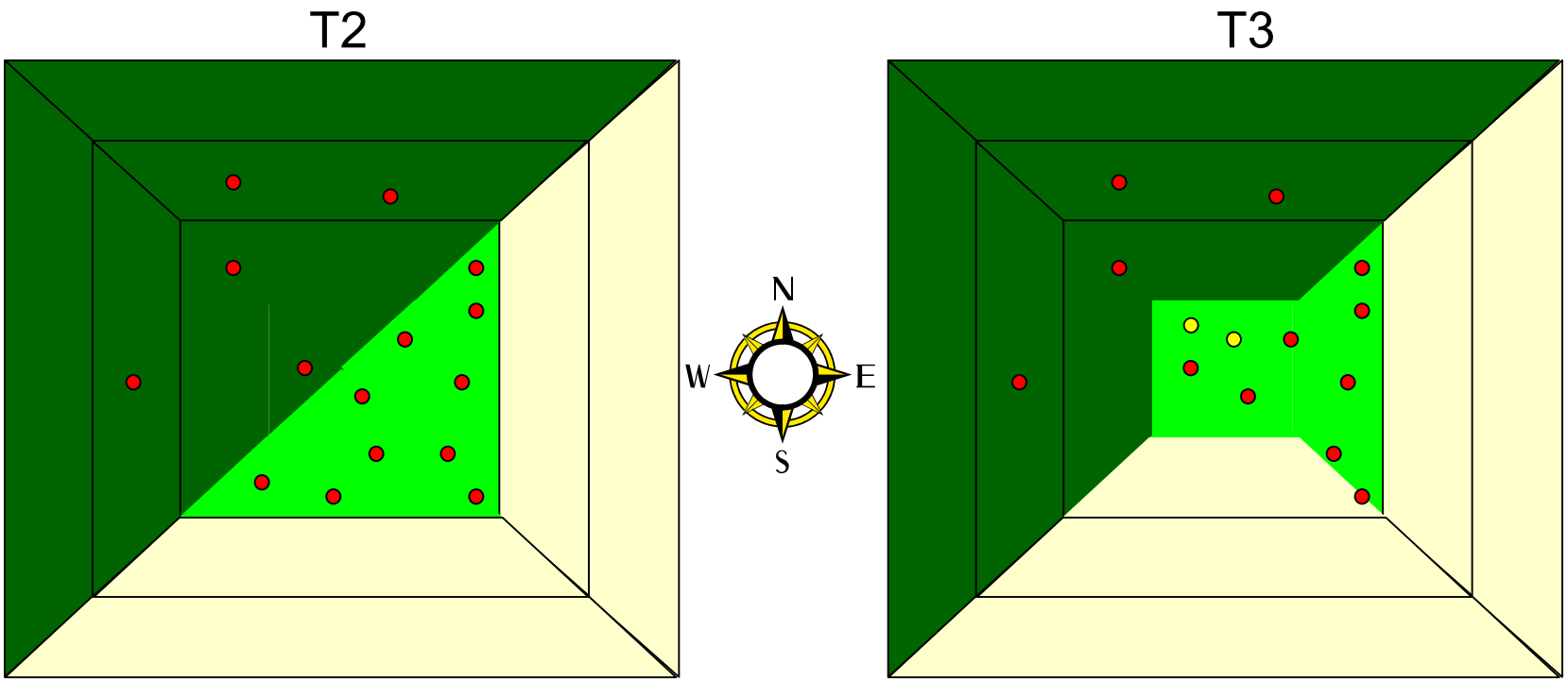
- deforestation of secondary forest land in the southern sector
- degradation* from primary to secondary forest land in the northern and western sectors

These data would be globally retrieved from satellite earth observation data

* *(forest land remaining as forest land)*

Carbon stock data to be reported on forest land
in the **ASSESSMENT PERIOD**



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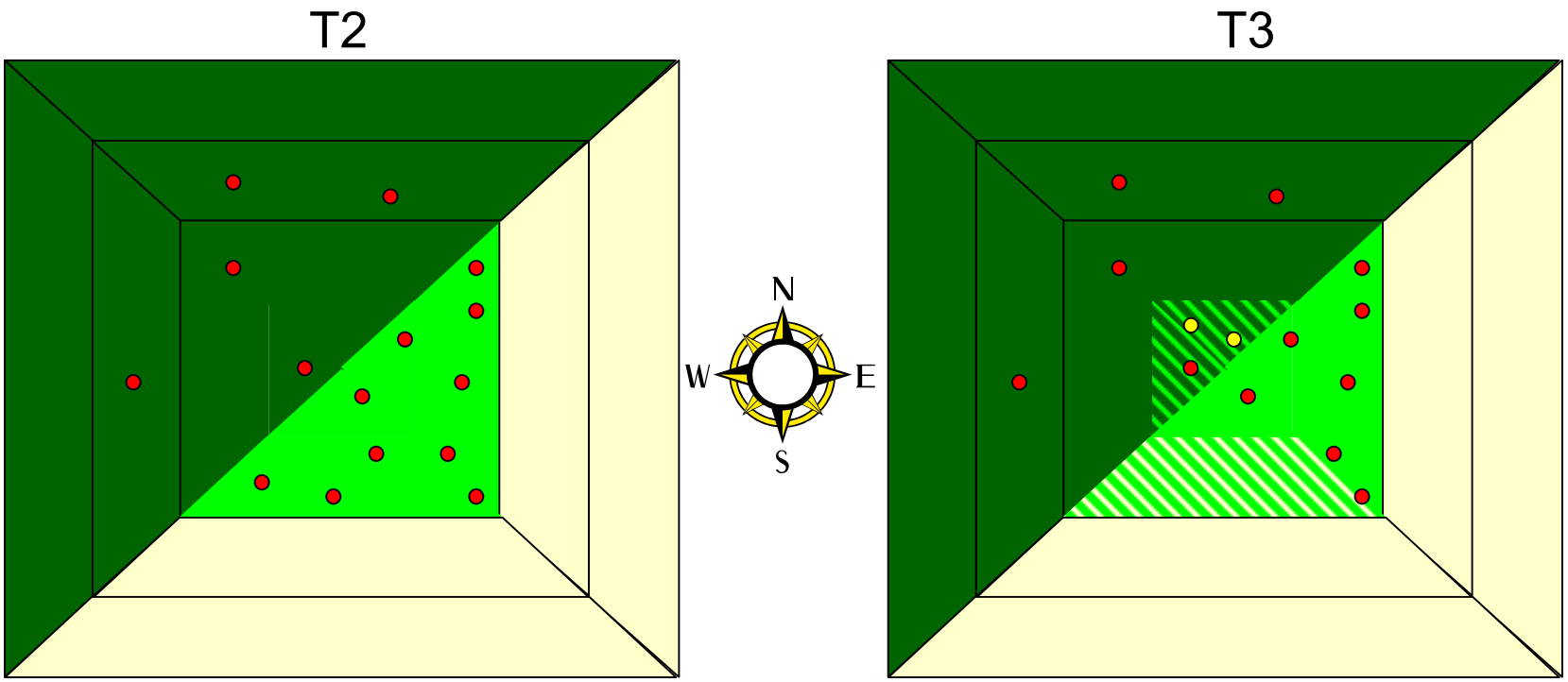
Each main forest types will be subdivided in two categories: primary and secondary. For each main forest type two field sampling designs will be established one for the primary and one for the secondary forest land. Sampling measurements will be realized at the beginning and at the end of the assessment period. At the end of the assessment period (T3) the secondary forest land sampling design will be revised. The sampling design should ensure carbon stock estimations with 5~10 % of uncertainty at 95 % CI.

Carbon stock changes to be reported on forest land
in the **ASSESSMENT PERIOD**



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- carbon stock changes from deforestation of secondary forest in the southern sector
- carbon stock changes from forest degradation in the western and northern sectors
- carbon stock changes from secondary forest land remaining forest land in the eastern sector

Highlights on forest degradation

- Degradation is defined as carbon loss in forest land remaining forest land at national level

- For the reference period, forest degradation will be assessed only as result of the variation from primary forest land to secondary forest land. The carbon stock change will result from the loss of primary versus secondary forest land multiplied for the difference in the per unit average carbon stock between primary and secondary forest land.

- For the assessment period, forest degradation will be assessed as variation from primary forest land to secondary forest land and as carbon loss in secondary forest land remaining forest land. In this case the carbon stock changes will result from the secondary forest land area remaining forest land multiplied for the difference in the per unit average carbon stock that will result from the sampling at the beginning (T2) and the end (T3) of the assessment period.

- The fact that the carbon stock changes from forest degradation will be assessed in two different ways (variation form primary to secondary forest land for the reference period and variation from primary to secondary forest land plus loss of carbon stock in secondary forest) will not consist a major problem as the emission from forest degradation in the reference period will be underestimated and thus it will result as a conservative threshold for assessing future emission reduction

- To report carbon stock changes due to forest degradation it will be necessary to assess activity data through “approach 3” and carbon stock through “tier 2” or “tier3”