



# Ikalahan Ancestral Domain

Mean annual rainfall:  
4,000 mm

## Tree cover transitions in space and time

The high pressure on the Kalahan Forest Reserve (KFR) contributes to the forest cover change within the ancestral domain. The conversion of forest to cash crop plantations, such as vegetable, is ranked as the dominant driver of tree change. Fortunately, the rate of deforestation is decreasing due to various tree growing activities implemented in the last decade.

Table 1. Five major land cover types within the KFR

Land use	Physical features	Dominant species	Land use practices
Agriculture	Generally in an open condition located on relatively flat to slope terrain structurally showing more undergrowth and few trees and intermediate layer on farm perimeter.	Mix agricultural crops (camote, cassava, beans, rice, corn, taro, okra, ginger) planted in patches.	Agricultural farming using combined traditional swidden farming and non-traditional system.
Agroforestry	Basically situated on moderate slope depicting a semi-open canopy with few intermediate and abundant undergrowth layer of condition.	Fruit bearing (avocado, mango, guava, citrus, papaya) and trees (mahogany, <i>Gmelina</i> , Narra).	Intercropping with mostly fruit bearing and tree crops.
Grassland	Usually abundant in open areas along moderate to steep terrain. Structurally, undergrowth layer dominated with abundance of grasses with very few spots of small trees.	Mostly <i>Imperata cylindrica</i> and <i>Themel triandra</i> but with some species of ferns, shrubs, and other grasses	Commonly used as pasture land though some areas were left abandoned making it prone to grassfire
Reforestation	On steep to very steep slope areas that showed slightly open canopy with dominant trees, followed by intermediate and undergrowth layers	Dominance of 10-15 year old plantation of either <i>Alnus</i> Benguet Pine or <i>Gmelina</i> .	Intercropping of coffee in reforested areas planted with <i>Alnus</i> and agricultural farming adjacent to <i>Gmelina</i> but pure planting of mix trees in other areas.
Secondary forest	Located on middle to higher elevated areas showing semi-closed canopy and fewer understory layers.	Dominance of dipterocarps (Palosapis, White Lauan, Guijo) and non dipterocarp (Pine, Philippine oaks, legume, <i>Syzygium</i> ), trees.	Absence of any land use practices within, except for tree planting in pine forest.

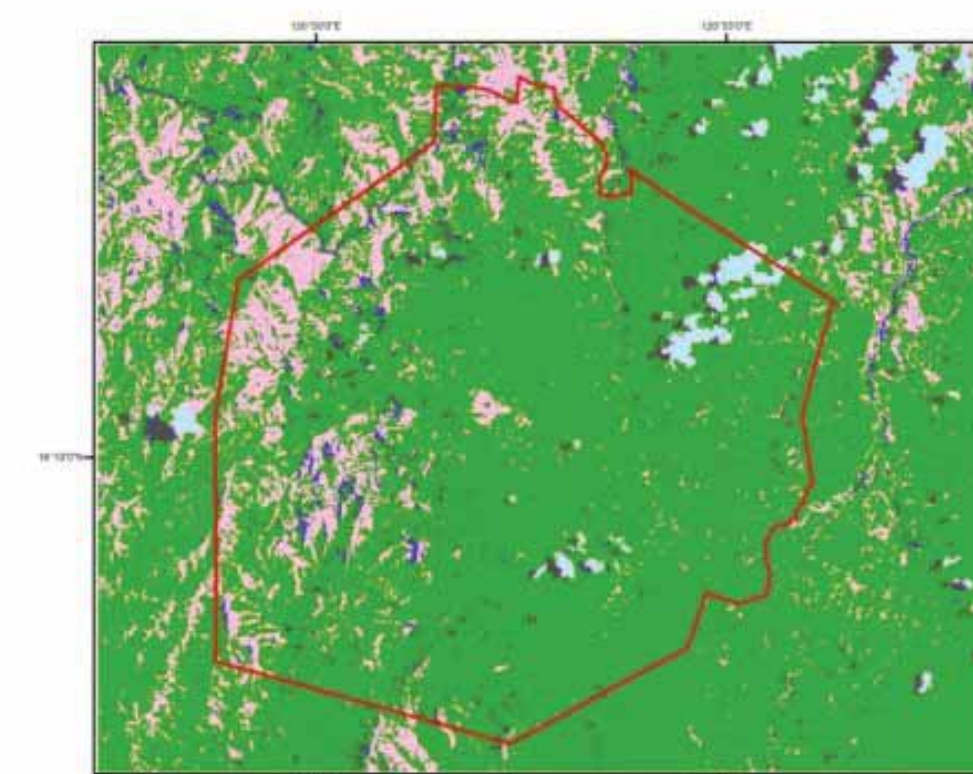
Source: Villamor, G.B., Pampolina N, Forcadilla R, Bugtong N, Alano J, Rice D, Omas T, Castillo R, Pulan D.2010. Rapid Carbon Stock Assessment (RaCSA), Kalahan, Nueva Viscaya Philippines. Working Paper 106. Bogor, Indonesia: World Agroforestry Centre (ICRAF) Southeast Asia Program. 87 p

- Land cover change assessment within KFR showed a 0.10% decrease in vegetation from 1989 to 2010. The decrease in forest cover is attributed largely to

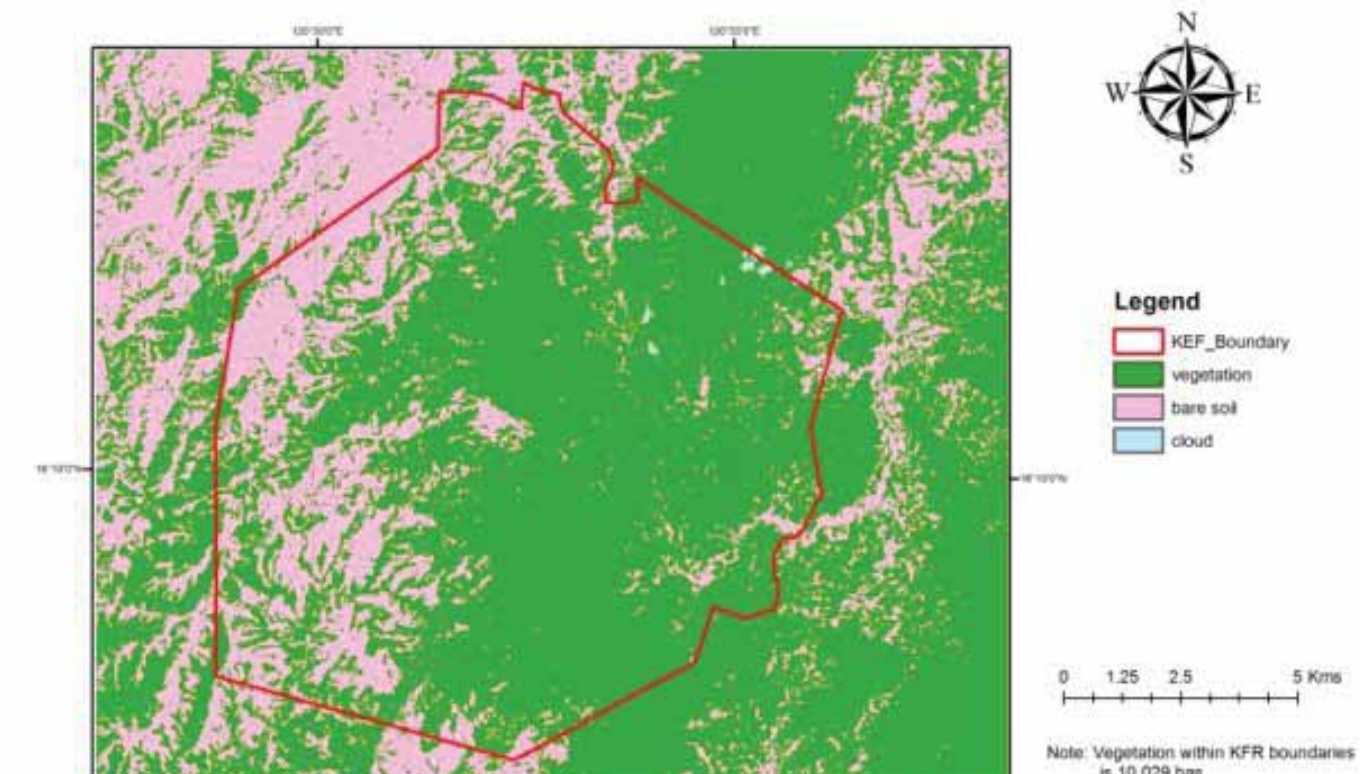


conversion of forest to brush lands and cultivated lands. An image analysis of the forest reserve between the two periods showed an on-going deforestation rate of 0.03% in the area.

Kalahan Forest Reserve Vegetation Map, 1989



Kalahan Forest Reserve Vegetation Map, 2010



Source: FAO. 2012. Linking Communities to Voluntary Forest Carbon Market: The Case of Kalahan, Nueva Vizcaya, Philippines (Final Report).

- Using the Forest, Agroforest, Low-Value Landscape or Wetland (FALLOW) model, it was predicted that the entire landscape would experience a decrease in forest area of about 85 ha/yr and increase of agricultural/grassland area of about 85 ha/yr from 2001-2030 given a population growth rate of 1.78/yr as the driver. FALLOW model simulates landscape dynamics and the consequences of the application of different drivers in various scenarios.

Source: Suyanto et al (2008) cited in Villamor, G.B. and M. Pindog. 2008. Participatory poverty and livelihood assessment report, Kalahan,Nueva Vizcaya, the Philippines. WP number 67. Bogor, Indonesia, World Agroforestry Centre -ICRAF, SEA Regional Office. 37p.

- Tree cover in KFR is expected to improve with various tree growing activities currently implemented by various stakeholders, such as the government's National Greening Program and the recently completed USAID project that restored 260 ha of forests, among many others.