Appendix 1. Categorizing countries by forest transition (FT) type.

The aim of this analysis was to provide and pilot a framework for evaluating the ecological impacts of forest transitions, which will become more useful as remote sensing technology improves our ability to distinguish between different types of secondary forest. To understand where different types of transitions are occurring, and the relative scales at which different packages of ecosystem services are unfolding globally, we classified countries with high levels of reforestation (Figure 2) according to their apparent predominant forest transition type. First, we used satellite estimates from the Hansen dataset (Hansen et al. 2013) to select the 50 countries with the greatest national proportional gross forest cover gain between 2000 and 2012. These 50 countries included all continents (except Antarctica) and several biomes (Table 1). We then categorized each as undergoing either a forest plantation transition, an agro-forestry transition, or a spontaneous regeneration transition. Because a number of countries had a relatively even distribution of two or more forest types, we added a "mixed" forest transition category with an even combination of plantations, agro-forestry or spontaneous regrowth. Countries were group into one of these four types as follows: A national "forest plantation transition" occurred where more than >50% of the gross forest cover gain according to Hansen et al. (2013) was attributed to an increase in planted forest area from 2000-2010 according the FAO FRA 2010 (FAO, 2010). Planted forests range from monotypic industrial plantations to semi-natural forests propagated by assisted reforestation (FAO, 2010). An "agroforestry transition" occurred where >50% of gross forest cover gain according to Hansen et al. (2013) occurred within "agricultural" and "agricultural mosaic" lands of 2001 as mapped by the MODIS MCD12Q1 global-land cover classification (Friedl et al. 2010), following the approach of Zomer et al. (2014). The label of "spontaneous regeneration transition" was applied to any country not satisfying these criteria for a forest-plantation or agro-forestry FT. In general, the spontaneous forest transition label describes natural forest gain dispersed in large part outside agricultural landscapes. The label of "mixed" forest transition was applied where forest cover was evenly split between two or more types of cover

In the absence of better global data, agroforestry was necessary defined here simply as an increase in forest cover on agricultural lands, as per Zomer et al. (2014). In practice, it is ambiguous whether the agroforest extent thus calculated comprises forests and fallows managed for agriculture (i.e., agroforestry) on still-occupied agricultural lands, or by natural regrowth on

abandoned agricultural lands. In the latter case, this would mean our agroforestry classification would be conflated with a spontaneous regeneration transition in contexts of widespread agricultural abandonment (Rudel et al. 2000). This data limitation speaks to the need for a comprehensive global database of agroforestry, which at present time does not exist. Our estimation here represents an alternative used elsewhere in the literature (Zomer et al. 2014).