



Figure 8. Cropland area and single- and double-cropping patterns from 2001 to 2006 for (a) Mato Grosso and each natural ecosystem of origin: (b) cerrado, (c) cerradão, and (d) forest.

because cerrado has lower above-ground biomass and smaller root structures, which make it easier to clear for croplands.

Extensification rates for cerrado-to-cropland transitions slow in 2005 and 2006, whereas double-cropping intensification continues to increase. The increased double cropping in cerrado may be due to a shift in the relative profits from Brazilian soybeans dropping with the falling Brazilian currency in 2004 (Nepstad et al. 2006), which likely made intensification more cost effective than extensification at that time. Further, double cropping is more widespread in the cerrado than in other biomes, because double-cropping intensification generally occurs a few years after extensification and there is a longer history of extensification in the cerrado (primarily southern Mato Grosso). For croplands from areas of forest and cerradão, extensification continues steadily, whereas intensification rates remain low. Existing croplands from the forest and cerradão biomes represent a potential target for intensification that follows environmentally sound production guidelines.

The process of cropland development is dynamic and the land-cover and land-use change story does not stop at land clearing. Suitable areas for mechanized croplands need to be large and amenable to large-scale mechanized agriculture: for