

## S4. Results of the sub-watershed cluster analysis.

To highlight different dynamics within the study area, we defined three groups of sub-watershed based on forest area change from 1986 to 2008: large increase (in more than 3% of the area, a threshold defined arbitrarily as the 80% quantile of the distribution of the absolute values of forest area changes), moderate increase (in less than 3% of the area), and decrease or no change (in less than 3% of the area). To analyze changes in forests area, we considered all forest ecosystems described previously: old, young and planted forests.

*Table 1. Mean forest area change (in %) from 1986 to 2008 in each group identified.*

<b>Groups</b>	<b>Subwatershed numbers</b>	<b>Mean forest area change (in %)</b>
Decrease or no change	1, 9 and 11	-1.28
Moderate Increase	3, 4, 6, 7, 8, 10, 12 and 13	1.16
Large Increase	2 and 5	10.49

The k-means algorithm was used to cluster the 13 sub-watersheds according to the changes of ES observed in these sub-watersheds between 1986 and 2008.

*Table 2: Mean changes in the levels of the six selected ES from 1986 to 2008 in each cluster identified (A: agricultural production, C: carbon, N: nitrogen retention, P: phosphorus retention, S: sediment retention, W: water yield).*

<b>Clusters</b>	<b>Subwatershed numbers</b>	<b>A</b>	<b>C</b>	<b>N</b>	<b>P</b>	<b>S</b>	<b>W</b>
Weak tradeoffs: more food, less carbon and water	1, 7 and 9	0.020	-0.036	0.203	0.157	0.004	-0.020
Weak tradeoffs: more carbon, less food	3, 4, 6, 8, 10, 11, 12 and 13	-0.019	0.017	0.214	0.135	-0.009	-0.004
Strong tradeoffs: more carbon, less food	2 and 5	-0.156	0.120	0.206	0.102	-0.030	0.004