Target equation for each type of commodity j (e.g, agriculture and pasture) and country k (which includes a set of pixels Π_k):

$$\sum_{i \in \Pi_k} x_i \omega_{ij} \sigma_{ij}^C \leq T_{jk} \tag{1}$$

where

$$\sigma_{ij}^C = \sigma_{ij} + \Delta\sigma_{ij}^{1P} f_{Cj} \tag{2}$$

$$T_{jk} = \Delta S_{jk} + \Delta S_{jk}^{1P} f_{Cj} - \Delta S_{jk}^{1F} f_{\delta j} \tag{3}$$

- x_i: variation of the fraction of pixel i that will be restored (positive) or deforested (negative). **Decision variable from optimizer**.
- f_{Cj}: fraction of gap that is proposed to be closed. **Chosen by user**.
- δ_{Cj}: fraction of gap that it is assumed to be closed on the future (it can be taken as 0).
- $\sigma_{ij}, \Delta\sigma_{ij}^{1P}$: maps that include suitability and yield ratio. **Output**.
- ω_{ij}: fraction of x_i that goes for restoring or deforesting each type of commodity. **Chosen by user**.
- $\Delta S_{jk}, \Delta S_{jk}^{1P}, \Delta S_{jk}^{1F}$: targets magnitudes for each country. **Output**.

f_{Cj}^{eq} is also given and it represents the minimum f_{Cj} necessary to avoid deforestation for the type of commodity j in case $f_{\delta j} = 0$. If $f_{Cj}^{eq} \leq 0$, the country does not need to close any gap for that commodity.

In case of being possible to aggregate the different types of commodities and assuming $f_{Cj} = f_C$ and $f_{\delta j} = f_\delta$, targets equations are reduced to:

$$\sum_{i \in \Pi_k} x_i \left(\sum_j \omega_{ij} \sigma_{ij} + f_C \sum_j \omega_{ij} \Delta\sigma_{ij}^{1P} \right) \leq \sum_j \Delta S_{jk} + f_C \sum_j \Delta S_{jk}^{1P} - f_\delta \sum_j \Delta S_{jk}^{1F} \tag{4}$$

Note that while $\omega_{ij}\sigma_{ij}$, $\omega_{ij}\Delta\sigma_{ij}^{1P}$, $\Delta S_{jk}, \Delta S_{jk}^{1P}$, and ΔS_{jk}^{1F} are additive, f_{Cj}^{eq} is not.