

## Note on ELIE with non-human natural resources

Serge-Christophe Kolm, 4-7-2008

On the possible rules of allocation on non human natural resources, Le Contrat Social Libéral (1985), chapter 10. This includes, in particular, maximin or leximin in fundamental utility (“practical justice”) under the constraint of self-ownership. Equal sharing is another possibility. It permits a partial equalization of human natural resources with full self-ownership (as a complement to Macrojustice, The Political Economy of Fairness, 2004).

$R$  = value of the non-human natural resources.

$R/n = r$  = this value per person.

$w_i$  = value of *given* productive capacities of individual  $i$  (wage rate with total time as unit).

ELIE plus equal sharing of  $R$ :

subsidy or tax of individual  $i$ :

$$T_i = t_i + r = k \cdot (\bar{w} - w_i) + r$$

If *full self-ownership*:

$T_i \geq 0$  for all  $i$ .

Highest  $k$  that respects this:  $k^o$  :

$$k^o \cdot (\bar{w} - \hat{w}) + r = 0$$

where  $\hat{w} = \max_i w_i$ .

$$k^o = r / (\hat{w} - \bar{w}).$$

$$T_i = r \cdot (1 + [(\bar{w} - w_i) / (\hat{w} - \bar{w})]) = r \cdot (\hat{w} - w_i) / (\hat{w} - \bar{w}). \quad \Sigma T_i = R$$

This is a distribution of non-human natural resources that gives more to people less endowed with human natural resources, respecting full self-ownership of all.

Cases:

$$w_i = \hat{w} \rightarrow T_i = 0$$

$$w_i = \bar{w} \rightarrow T_i = r$$

$$w_i = 0 \rightarrow T_i = r \hat{w} / (\hat{w} - \bar{w}) = r / [1 - (\bar{w} / \hat{w})].$$

If  $\hat{w} \gg \bar{w}$ , this  $w_i \simeq r$ . Does this give a sufficient minimum income? If not  $\rightarrow$  a somewhat higher  $k$ , or a specific anti-poverty policy, which has to be financed.

General:

$$T_i \geq 0 \text{ for all } w_i \leq \bar{w} + (r/k), \quad (\bar{w} \text{ if } r=0).$$