$$Min \sum_{p \in \psi} sf_p * ct_p + \sum_{(V,s) \in AL} cn_s * E_{V,s} * cr_V + ct_L \tag{1}$$

$$\sum_{V:(V,s) \in AL} E_{V,s} \leq 1, \quad \forall s \in N^S \tag{2}$$

$$\sum_{s:(V,s) \in AL} E_{V,s} = 1, \quad \forall V \in N^V \tag{3}$$

$$\sum_{p:x \in p} sf_p \leq \beta c_x, \quad \forall x \in L^S \tag{4}$$

$$\sum_{p \in \psi^c} sf_p = \beta r_c, \quad \forall c \in L^V \tag{5}$$

$$\sum_{p \in \psi_s^c} sf_p = \beta r_c, \quad \forall c \in L^V \tag{6}$$

$$\sum_{p \in \psi} \alpha_{p,(V,s)} * sf_p \leq E_{V,s} * T_V, \quad \forall (V, s) \in AL, V \in N^V, s \in N_S \tag{7}$$

$$sf_p \leq x_p * \beta r_c \quad \forall p \in \psi_s^c, c \in L^V \tag{8}$$

$$\sum_{p:x \in p, p \in \psi^c} x_p * \beta r_c \leq \beta c_x, \quad \forall x \in L^S \tag{9}$$

$$\sum_{p \in \psi^c} x_p = 1 \quad \forall c \in L^V \tag{10}$$

$$\sum_{p \in \psi_s^c} x_p = 1 \quad \forall c \in L^V \tag{11}$$

$$\sum_{p \in \psi} \alpha_{p,(V,s)} * x_p \leq E_{V,s} * D_V \quad \forall (V, s) \in AL, V \in N^V, s \in N^S \tag{12}$$

$$\sum_{p \in \psi} x_p * \theta_{p,i} \leq nc_i \quad \forall i \in N^S \tag{13}$$