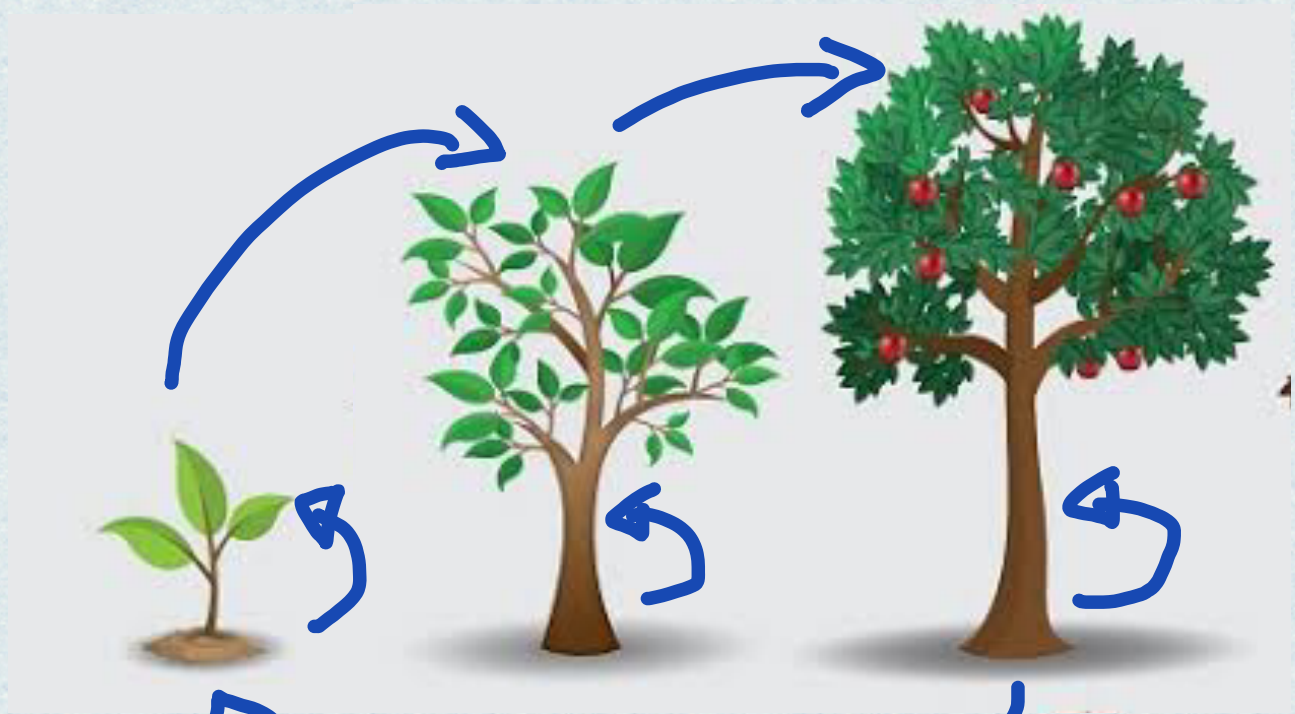


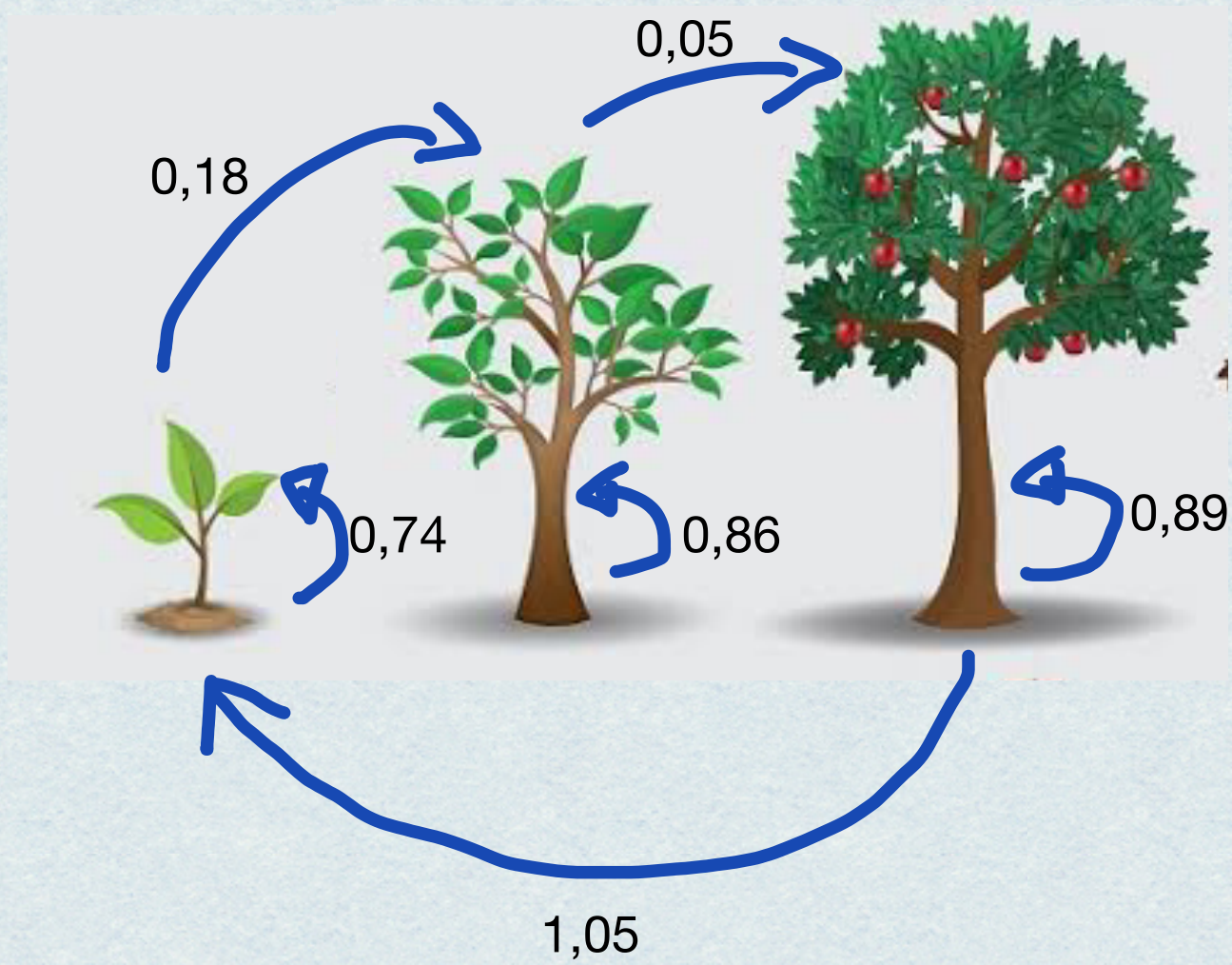
BIE 0320

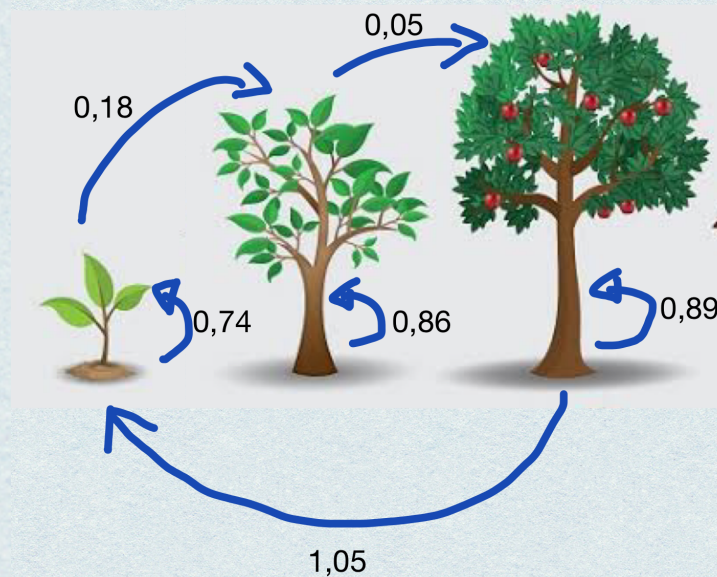


BIO-USP

$$N_{t+1} = \lambda \cdot N_t$$







$$P_{t+1} = 0,74 \times P_t + 0,00 \times J_t + 1,05 \times A_t$$

$$J_{t+1} = 0,18 \times P_t + 0,86 \times J_t + 0 \times A_t$$

$$A_{t+1} = 0 \times P_t + 0,05 \times J_t + 0,89 \times A_t$$

$$\begin{bmatrix} 0,74 & 0,00 & 1,05 \\ 0,18 & 0,86 & 0 \\ 0 & 0,05 & 0,89 \end{bmatrix} \times \begin{bmatrix} P_t \\ J_t \\ A_t \end{bmatrix} = \begin{bmatrix} P_{t+1} \\ J_{t+1} \\ A_{t+1} \end{bmatrix}$$

$$\begin{array}{c} t \\ k+1 \end{array}
 \begin{bmatrix} P_{11} & P_{21} & F_{31} \\ P_{12} & P_{22} & P_{32} \\ P_{13} & P_{23} & P_{33} \end{bmatrix}
 \times
 \begin{bmatrix} N_1 \\ N_2 \\ N_3 \end{bmatrix}$$

