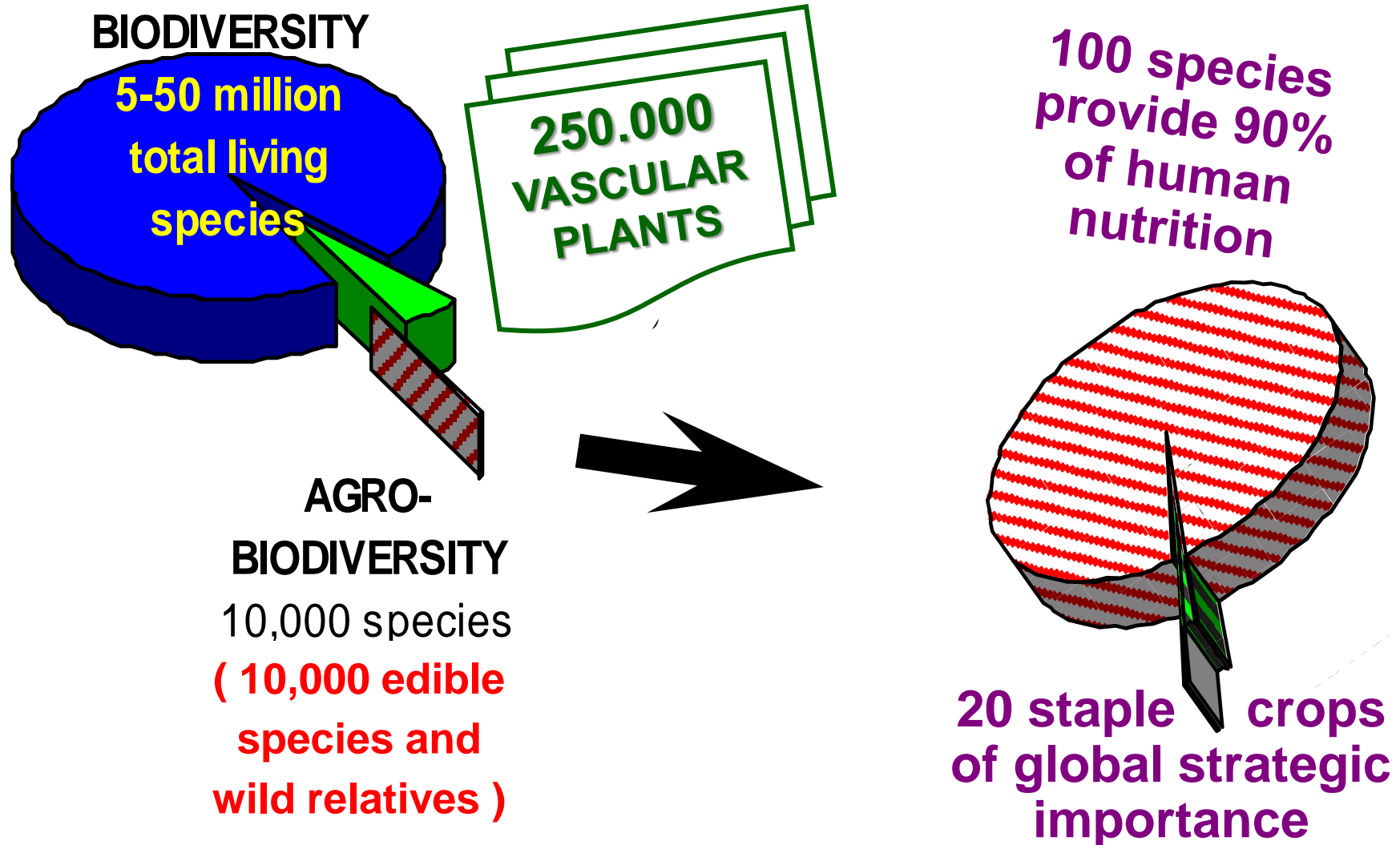


TRAINING PROGRAMMES

TRAIN-THE-TRAINERS AND TRAIN-THE-TRAINEES PROGRAMMES ON NEW TECHNOLOGIES

- **MAIN TOPICS OF WORLDWIDE ENVIRONMENTAL CONTEXT**
- **RESILIENCE AND HOMEOSTASIS**
- **BIODIVERSITY**
- **NATURAL RESOURCES MANAGEMENT**

Vegetable Bio-diversity : from Forest- to Agro-bio-diversity



Example of NON SUSTAINABLE PLANNING

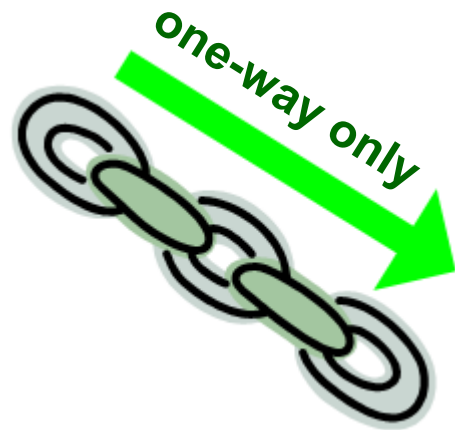
A tropical forest in South America,
substituted with *GMO* soybean crops

(Mato Grosso, Brasil)

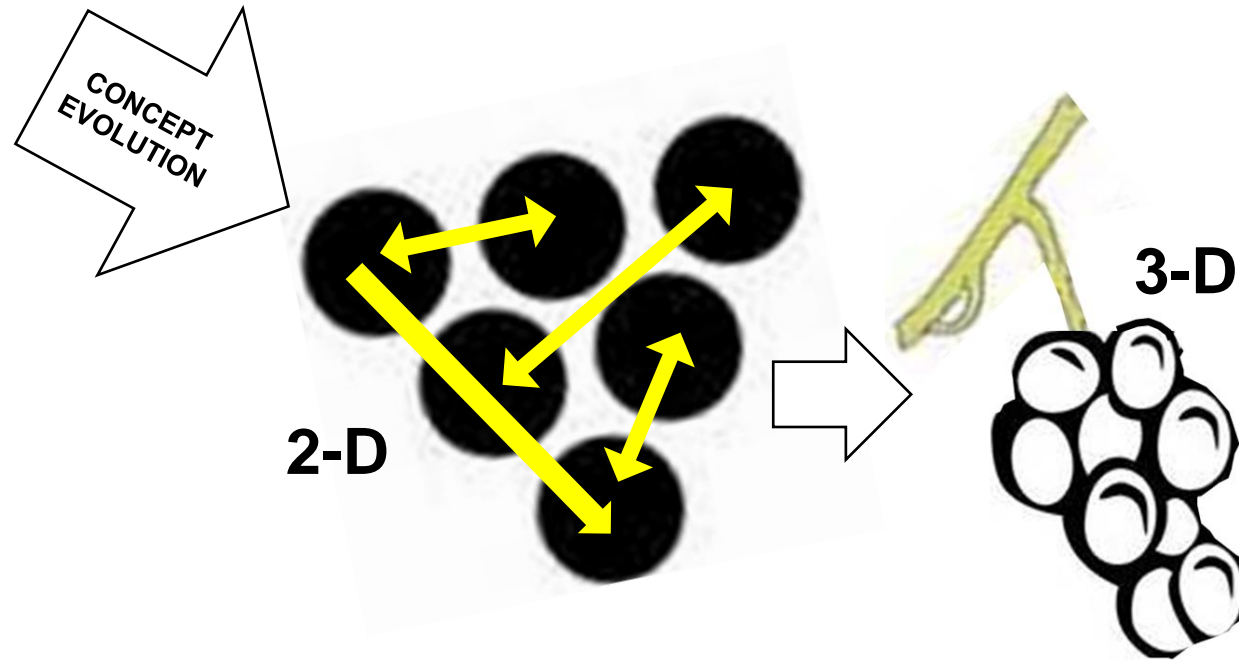


SUPPLY-CHAINS AND CLUSTERS: THE MOST POWERFUL TOOLS FOR THE SUSTAINABLE DEVELOPMENT OF THE “VILLAGE PROJECT” FOR THE “GLOCAL” PHYLOSOPHY OF THE GREEN ECONOMY

The typical **supply-chain** is structured, like the rings of a chain, in a subsequent one-way flow with a univocal direction “from farm to fork”. This element is common food, feed and no-food supply-chains. The relationships between two subsequent phases are one-way only:



GLOCAL(*) = “think global and act local” represents the funding concept of the green economy, which refers to the availability of general win-win concepts applicable and customized to local scale.



The typical **cluster** structure shows the interactions between and among the different supply-chains and the elementary phases of any supply-chain. The relationships between and among the different phases and/or supply-chains allow the holistic results typical of the synergistic added value of the “cluster projects”.

THE INTERACTIONS AMONG THE DIFFERENT **SUPPLY-CHAINS** CREATING THE **CLUSTER** OF THE VILLAGE PROJECT

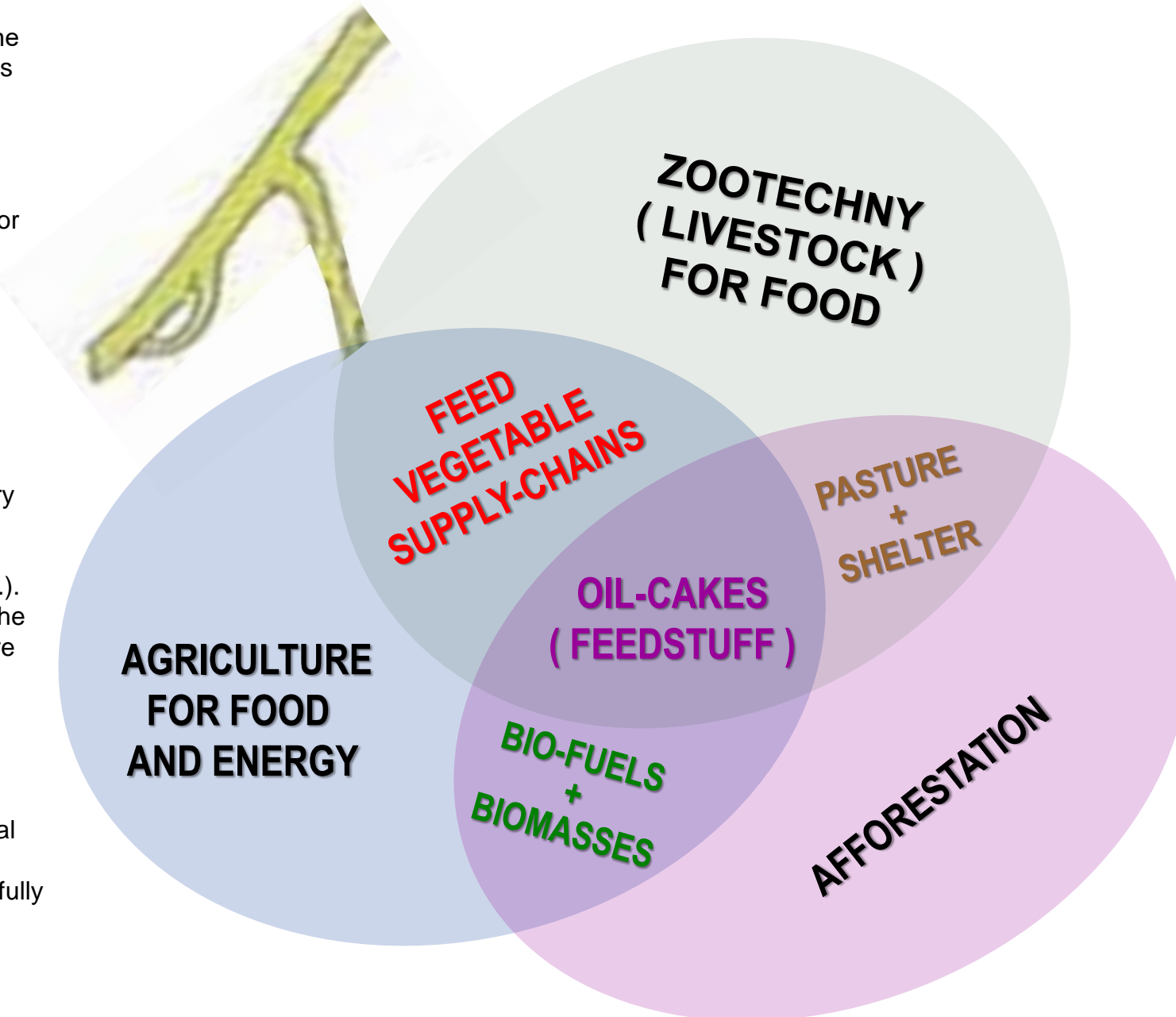
The “Village Project” for the African Rural Communities shows the synergistic integration among the 3 typical **supply-chains** creating a main **cluster** :

- 1) the agricultural plots for food production;
- 2) the breeding activities (zootechny);
- 3) the (re)afforestation programme.

The three supply-chains provide either the main production (food, feed, wood, oils...) or secondary products (oil-cakes, vegetable remains, animal manure...).

The interactions among the different supply-chains are shown in the annexed scheme of “multi-chain cluster”.

Anyway, any single supply-chain (vegetable production, forestry, animal breeding) is self-sufficient when the planning is carefully customized with the yet existing territorial characteristics.



THE **MACRO-CLUSTER** STRUCTURE FOR THE RURAL COMMUNITY

A STRATEGIC CENTRALE “VILLAGE ENCLAVE” INCLUDING THE SEEDS PRODUCTION, IN CONNECTION WITH OTHER VILLAGE PROJECTS OF THE SAME AGRO-ENVIRONMENTAL RURAL COMMUNITY

A REAL APPLICATION OF THE “**GLOCAL**” PHYLOSOPHY OF THE GREEN ECONOMY

The “macro-cluster” structure of the local network of “PLOT AREAS” for the typical African Rural Communities reflects the characteristics of the local territory, such as

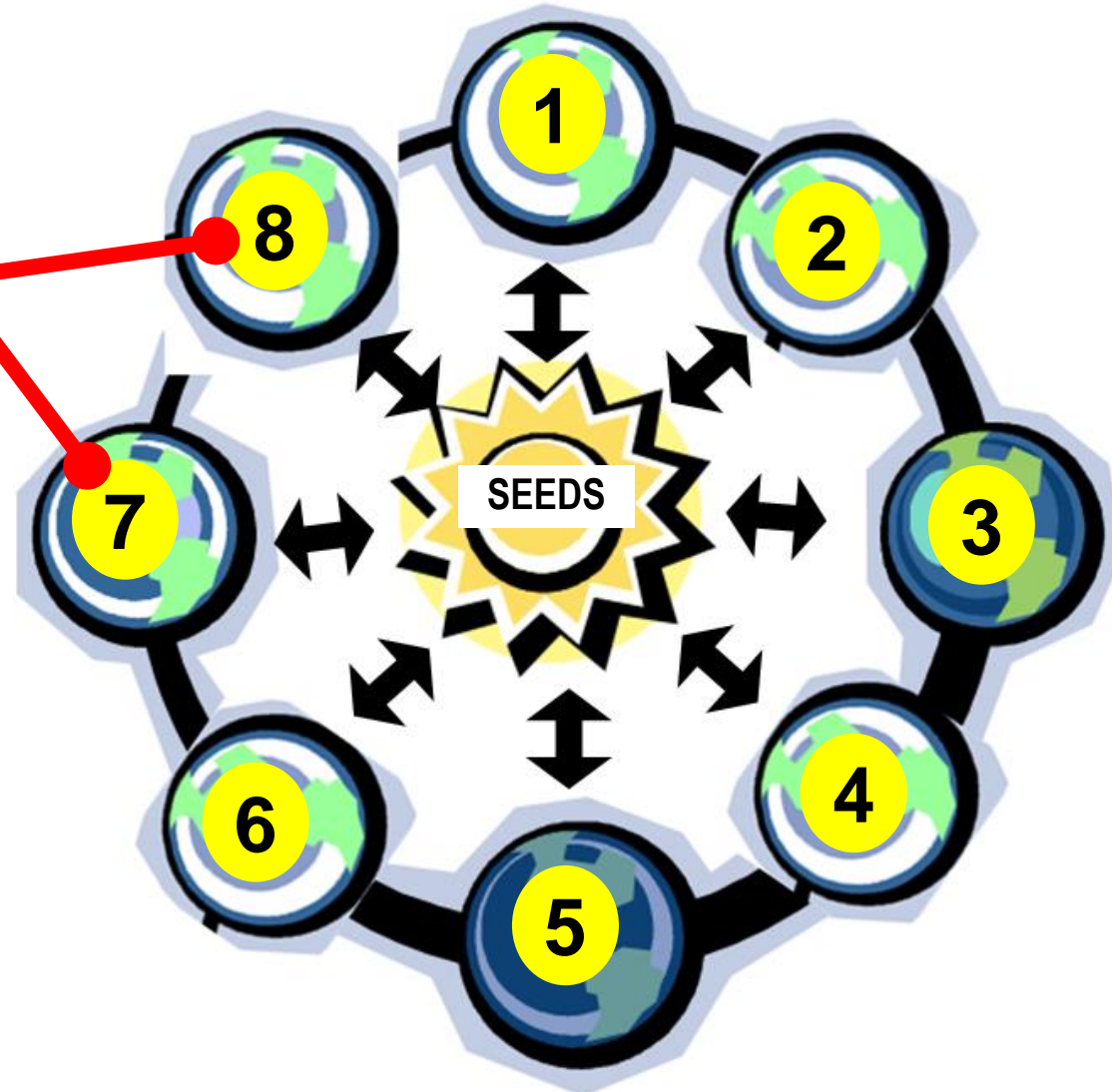
- 1) Geographical factors
- 2) Pedological aspects
- 3) Water resources
- 4) Logistical elements
- 5) Anthropological factors
- 6) Ethnic composition
- 7) Cultural factors
- 8) Limiting factors

The most important limiting technical factor consists in the seeds availability as the main reference for the improvement of the performances of vegetable productions.

So, the “**SEEDS ENCLAVE**” must be focalized to the goal of the local territorial self-sufficiency of self-multiplied seeds.

The modular dimensions of the served Village Projects vary from 600 to 25.000 Ha of arable land, plus bordering new afforestation.

**PLOT AREAS
FOR
FARMING**

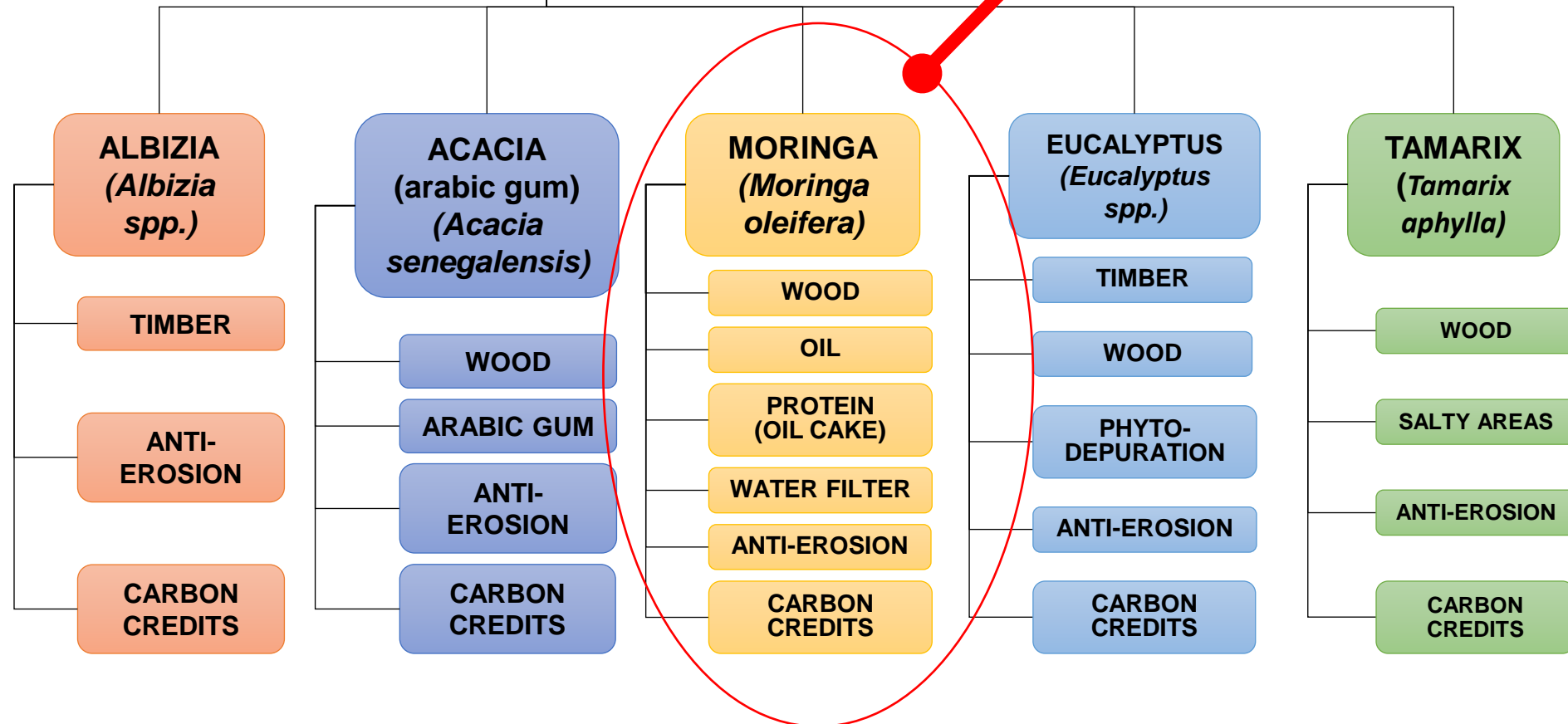


THE MIX FOR THE FORESTRY PROGRAM OF THE "VILLAGE PROJECT"

Innovative integrated technologies for afforestation in synergy with agriculture

THE VILLAGE PROJECT AFFORESTATION & REAFFORESTATION WINNING OPTIONS

The main choice for the
Village Project Afforestation
(in case of favorable climatic
conditions):
Moringa oleifera



FOOD SECURITY INDEXES FOR VILLAGE PROJECTS

Equivalences of food security according to productivity and parameters of nutritional kilo-calories content

TABLE OF VEGETABLE FOOD POTENTIAL OF "VILLAGE PROJECT SUPPLY CHAIN"

TYPE OF VEGETABLE FOOD FROM IRRIGATED CROPS	kcal / 100 gr of commercial food	kcal / kg	FOOD PRODUCTION x HA x 1 CYCLE (kg/Ha)	kcal PRODUCTION x HA x CYCLE (kcal/Ha)	N. OF CROP CYCLES x YEAR	kcal PRODUCTION x HA x YEAR (kcal/Ha)	HUMAN FOOD: ENERGY REQUIREMENT "PER CAPITA" kcal x DAY x 1 PERSON (ADULT)	EQUIVALENT NUMBER OF DAYS OF "FOOD SUPPLY X 1 PERSON" SUPPORTED BY 1 HA x 1 YEAR	N° OF P.E.F. (PERSONS-EQUIVALENT FED) x HA
MAIZE (YELLOW CORN)	362,00	3.620,00	9.000,00	32.580.000	2,00	65.160.000	2.400	27.150,00	74,38
WHEAT, RICE & OTHER CEREALS (MIX)	341,00	3.410,00	3.000,00	10.230.000	2,00	20.460.000		8.525,00	23,36
CHICKPEAS & BEANS (MIX)	345,50	3.455,00	1.500,00	5.182.500	2,00	10.365.000		4.318,75	11,83
TOASTED GROUND-NUT	594,00	5.940,00	2.500,00	14.850.000	2,00	29.700.000		12.375,00	33,90
MILLET (Panicum miliaceum) and/or FONIO (Digitaria exilis)	341,00	3.410,00	1.200,00	4.092.000	2,00	8.184.000		3.410,00	9,34
OIL GROUND NUT RAW OIL	899,00	8.990,00	950,00	8.540.500	2,00	17.081.000		7.117,08	19,50
BEEF's MEAT-EQUIVALENT FROM GROUND-NUT OIL-CAKE FEEDSTUFF	130,00	1.300,00	90,00	117.000	2,00	234.000		97,50	0,27
CHICKEN's MEAT-EQUIVALENT FROM GROUND-NUT OIL-CAKE FEEDSTUFF	110,00	1.100,00	488,10	536.905	2,00	1.073.810		447,42	1,23
TILAPIA FISH's MEAT-EQUIVALENT: FROM GROUND-NUT OIL-CAKE FEEDSTUFF	85,00	850,00	488,10	414.881	2,00	829.762		345,73	0,95
OIL SUNFLOWER RAW OIL	899,00	8.990,00	1.050,00	9.439.500	2,00	18.879.000		7.866,25	21,55
BEEF's MEAT-EQUIVALENT FROM SUNFLOWER OIL-CAKE FEEDSTUFF	130,00	1.300,00	102,50	133.250	2,00	266.500		111,04	0,30
CHICKEN's MEAT-EQUIVALENT FROM SUNFLOWER OIL-CAKE FEEDSTUFF	110,00	1.100,00	780,00	858.000	2,00	1.716.000		715,00	1,96
TILAPIA FISH's MEAT-EQUIVALENT: FROM SUNFLOWER OIL-CAKE FEEDSTUFF	85,00	850,00	780,00	663.000	2,00	1.326.000		552,50	1,51
BANANA (FRESH FRUIT)	65,00	650,00	60.000,00	39.000.000	1,00	39.000.000		16.250,00	44,52
TOMATO (DWARF TYPE) (FRESH FRUIT)	18,00	180,00	75.000,00	13.500.000	2,00	27.000.000		11.250,00	30,82
POTATO (FRESH FRUIT)	83,00	830,00	45.000,00	37.350.000	2,00	74.700.000		31.125,00	85,27
CARROT (FRESH FRUIT)	35,00	350,00	40.000,00	14.000.000	2,00	28.000.000	11.666,67	31,96	