Human and Insect Agriculture Codebook, Version 3 (28JAN16)

I. "Agricultural" practice variables

VI.1 Selecting substrate (universal)
1 = low specificity
2 = moderate specificity
3 = high specificity
9 = missing

VI.2 Internal sustainability (harvested domesticates provide source for next crop cycle)
1 = 0 to 33%
2 = 34 to 67%
3 = 68 to 100%
9 = missing

VI.3 Planting crops
1 = low investment
2 = moderate investment
3 = high investment
9 = missing

VI.4 Preparing substrate
1 = low investment
2 = moderate investment
3 = high investment
9 = missing

VI.5 Dimensions of substrate
1 = 2d
2 = 3d
9 = missing

VI.6 Temporal variation in cultivation
1 = discrete (seasonal/crop rotation/fallowing)
2 = continuous
9 = missing

VI.7 Diversity of domesticates (at a single location/within a single group)
1 = single domesticate
2 = two or three domesticates
3 = four or more domesticates
9 = missing

VI.8 Monitoring crops for disease or thieves/predators
1 = 0 to 33% of the time
2 = 34 to 67% of the time
3 = 68 to 100% of the time
9 = missing

VI.9 "Weeding": Physical removal of invasive pests/predators
1 = 0 to 33% of pests removed
2 = 34 to 67% of pests removed
3 = 68 to 100% of pests removed
9 = missing

VI.10 Engineering for optimal growth condition (climate control, watering, etc.)
1 = low investment
2 = moderate investment
3 = high investment
9 = missing

VI.11 Pests: Chemical control
1 = 0 to 33% of crops treated
2 = 34 to 67% of crops treated
3 = 68 to 100% of crops treated
9 = missing

VI.12 Pests: Microbial control
1 = 0 to 33% of crops treated
2 = 34 to 67% of crops treated
3 = 68 to 100% of crops treated
9 = missing

VI.13 Fertilizing: Organic
1 = 0 to 33% of crops treated
2 = 34 to 67% of crops treated
3 = 68 to 100% of crops treated
9 = missing

VI.14 Fertilizing: Synthetic chemical
    1 = 0 to 33% of crops treated
    2 = 34 to 67% of crops treated
    3 = 68 to 100% of crops treated
    9 = missing

VI.15 Reproductive isolation from free-living populations (reproductive barriers)
    1 = low isolation
    2 = moderate isolation
    3 = high isolation
    9 = missing

VI.16 Controlling breeding partners (controlling recombination and sexual selection)
    1 = low control
    2 = moderate control
    3 = extensive control
    9 = missing

VI.17 Artificial selection for domesticate improvement
    1 = no selection performed
    2 = selection done, but less than annually
    3 = selection common (annually or more frequent)
    9 = missing

VI.18 Genetic engineering for domesticate improvement (e.g. GMO)
    1 = absent
    2 = present
    9 = missing

II. Agriculture process variables

VII.1 Degree of dependence on domesticated resources (estimated through caloric intake or productive effort)
    1 = 0 to 33% of crops
    2 = 34 to 67% of crops
    3 = 68 to 100% of crops
    9 = missing

VII.2 Sociality
    1 = asocial/solitary
    2 = ultrasocial/communal
    3 = eusocial
    9 = missing

VII.3 Task specialization
    1 = no agricultural task specialists
    2 = one or two specialists
    3 = three or more specialists
    9 = missing

VII.4 Use of extrasomatic technology
    1 = absent
    2 = present
    9 = missing

VII.5 Use of somatic technology/specialization
    1 = absent
    2 = present
    9 = missing

VII.6 Information transmission
    1 = genetic
    2 = developmental
    3 = traditional
    9 = missing

VII.7 Storage of domesticates
    1 = absent
    2 = seasonal but less than a year
    3 = more than a year
    9 = missing

III Uses of domesticates variables

VIII.1 Subsistence foods
    1 = absent
    2 = present
    9 = missing

VIII.2 Secondary foods
    1 = absent
    2 = present
    9 = missing

VIII.3 "Drug" foods
    1 = absent
    2 = present
    9 = missing

VIII.4 Raw materials
    1 = absent
    2 = present
    9 = missing

VIII.5 Utensils
    1 = absent
    2 = present
    9 = missing

VIII.6 Labor
    1 = absent
    2 = present
    9 = missing

VIII.7 Protection
    1 = absent
    2 = present
    9 = missing

VIII.8 Detoxification
    1 = absent
    2 = present
    9 = missing

IV. Biological impacts of agriculture variables

VIV.1 Population density
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.2 Community size
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.3 Number of communities
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.4 Catchment area
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.5 Genetic changes
    1 = absent
    2 = present
    9 = missing

VIV.6 Longevity
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.7 Age distribution
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.8 Sex ratios
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.9 Birth rate
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.10 Death rate
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.11 Age of reproduction
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.12 Density dependence
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.13 Pathogen load
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.14 Nutrition
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.15 Zoonotics
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.16 "Wear and tear"
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.17 Plastic responses
    1 = absent
    2 = present
    9 = missing

VIV.18 Microbiota
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.19 Ecological diversity
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VIV.20 Ecological assemblage
    1 = declines
    2 = stable
    3 = increases
    9 = missing

V. "Sociocultural" impacts of agriculture variables

VV.1 Sedentarism
    1 = declines
    2 = stable
    3 = increases
    9 = missing

VV.2 Intra-community communication/ coordination
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.3 Inter-community communication/ coordination
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.4 Intra-community territoriality/ ownership
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.5 Inter-community territoriality/ ownership
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.6 Intra-community violence
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.7 Inter-community violence
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.8 Intra-community exchange/ transmission/ diffusion
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.9 Inter-community exchange/ transmission/ diffusion
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.10 Kinship structure
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.11 Size of kin group
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.12 Access to and control of resources
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.13 Access to and control of reproduction (social and physical)
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.14 Access to leadership
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.15 Differential survivorship
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.16 Cultural evolutionary mechanisms for selection of behaviors and their transmission
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.17 Genetic mechanisms for selection of behaviors and their transmission
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.18 Diversity of tasks
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.19 Specialization of tasks
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.20 Informal social control mechanisms (religion/ tradition)
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.21 Genetic social control mechanisms
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.22 Communal social control mechanisms
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.23 Authoritarian social control mechanisms
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.24 Traditional coordination of labor and tasks (ritual/ religion/ mythology)
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.25 Genetic coordination of labor and tasks
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.26 Authoritarian coordination of labor and tasks
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.27 Communal decision making
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.28 Pheromonal communication
- 1 = declines
- 2 = stable
- 3 = increases
- 9 = missing

VV.29 Tactile communication
  1 = declines
  2 = stable
  3 = increases
  9 = missing

VV.30 Acoustic communication
  1 = declines
  2 = stable
  3 = increases
  9 = missing

VV.31 Visual communication
  1 = declines
  2 = stable
  3 = increases
  9 = missing

VV.32 Linguistic communication
  1 = declines
  2 = stable
  3 = increases
  9 = missing

VV.33 Written communication
  1 = declines
  2 = stable
  3 = increases
  9 = missing

VV.34 Environmental information extraction--observation / interaction
  1 = declines
  2 = stable
  3 = increases
  9 = missing

VV.35 Environmental information extraction--dedicated organic sensors
  1 = declines
  2 = stable
  3 = increases
  9 = missing

VV.36 Environmental information extraction--technological sensors
  1 = declines
  2 = stable
  3 = increases
  9 = missing

Index Variables
All index variables were constructed with standardized scores.

Cronbach's alpha was used to validate the indices.

Ag Process Index =
$\sum$ ZV2.1, ZV2.3, ZV2.4, ZV2.7;
α = .822

Ag Practice Index =
$\sum$ ZV1.1-ZV1.10, ZV1.13, ZV1.15, ZV1.16; α = .941

Ag Uses Index=
$\sum$ ZV3.1-ZV3.6; α = .929

Community Relations Index =
$\sum$ ZV5.2-ZV5.9; α = .818

Demographics Index =
$\sum$ ZV4.1, ZV4.2, ZV4.6-ZV4.9, ZV4.11;
α = .903

Ecological Index =
$\sum$ ZV4.19, ZV4.20; α = .911

Health Index =
$\sum$ ZV4.13, ZV4.14, ZV4.16; α = .753

Social Control Index =
$\sum$ ZV5.20, ZV5.22-ZV5.24, ZV5.26;
α = .749

Specialization Index =
$\sum$ ZV5.18, ZV5.19; α = 1.0