

**Livestock & MMS info**

production systems,  
density distribution,  
weights, N excretion

**Meteorology/Climate**

air temperature, soil temperature,  
humidity, wind speed, precipitation,  
evaporation, soil moisture

**Crop calendar**

planting dates,  
harvesting dates,  
growing seasons

**N application**

synthetic fertilizers,  
application rates,  
cropping areas

**AMCLIM Model**

**Housing Module**

**Livestock info**

**Management**

**Meteorology**

Housing  
systems,  
types, envs

Enclosed - Managed ventilation

slat pit houses (in-situ storage),  
poultry houses

Partial enclosed - Natural ventilation

slat pit houses (in-situ storage),  
barns

Unmanaged manure: dumping,  
fishpond, sewage, etc.

Managed manure

**Manure Management Module**

**Management**

**Meteorology**

**MMS info**

Purpose,  
phase,  
envs

Manure under management

Fuel, lagoon, left on  
pastures (solid manure)

Manure used as fertilizers

Solid manure: indoor storage  
Liquid manure: covered/indoor/  
outdoor storage

**Land Module**

**Livestock info**

**Management**

**Meteorology**

Grazing

Year-  
round/  
Seasonal

Urine patch,  
dung pat

Synthetic fertilizer application

**N application**

**Management**

**Meteorology**

**Crop calendar**

Timing,  
techs,  
rates

Urea,  
NH<sub>4</sub><sup>+</sup>  
on 16  
major  
crops

Manure fertilizer application

**Management**

**Meteorology**

**Planting season**

Timing,  
techs,  
rates

Slurry,  
solid  
manure  
on field