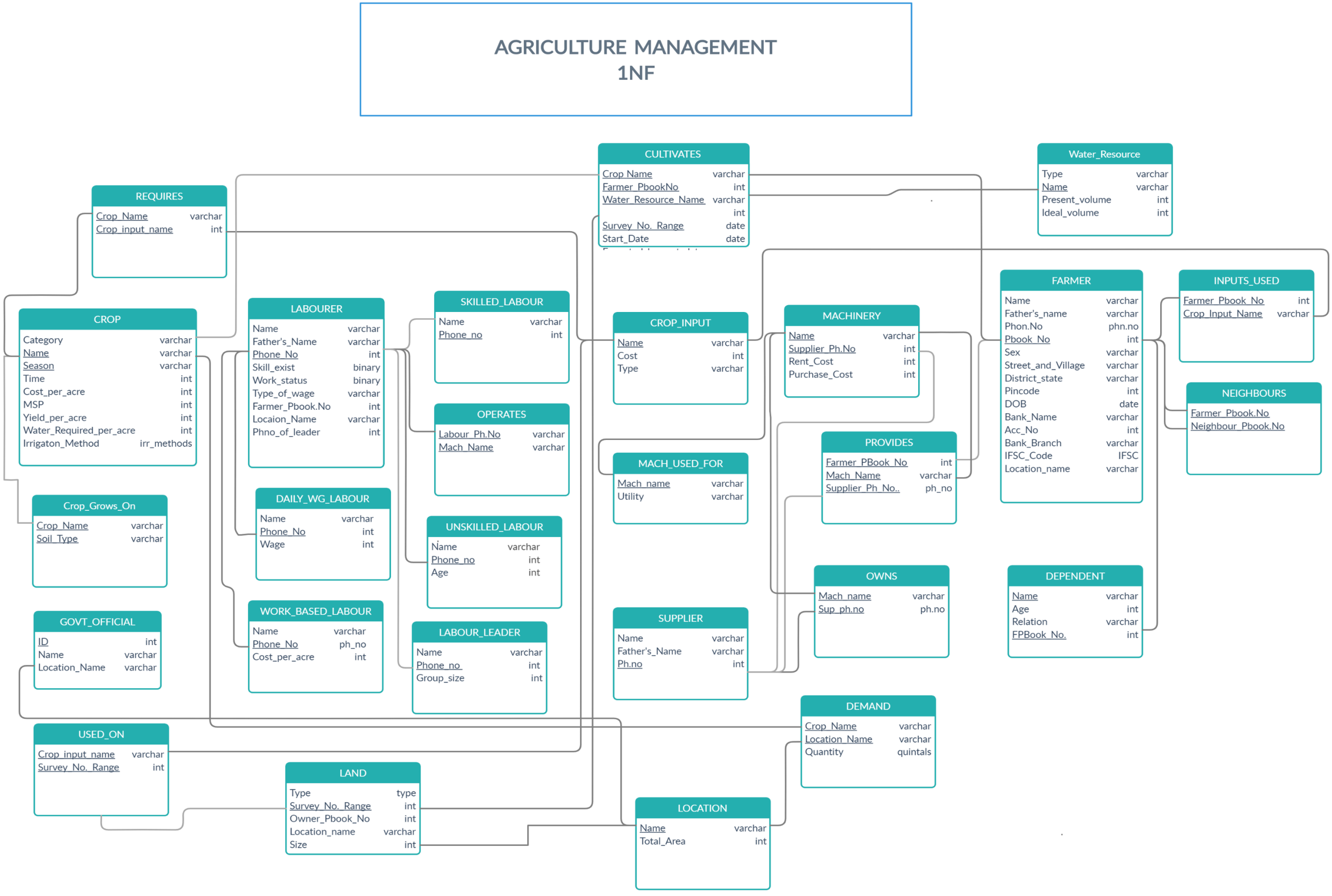
Agriculture Management

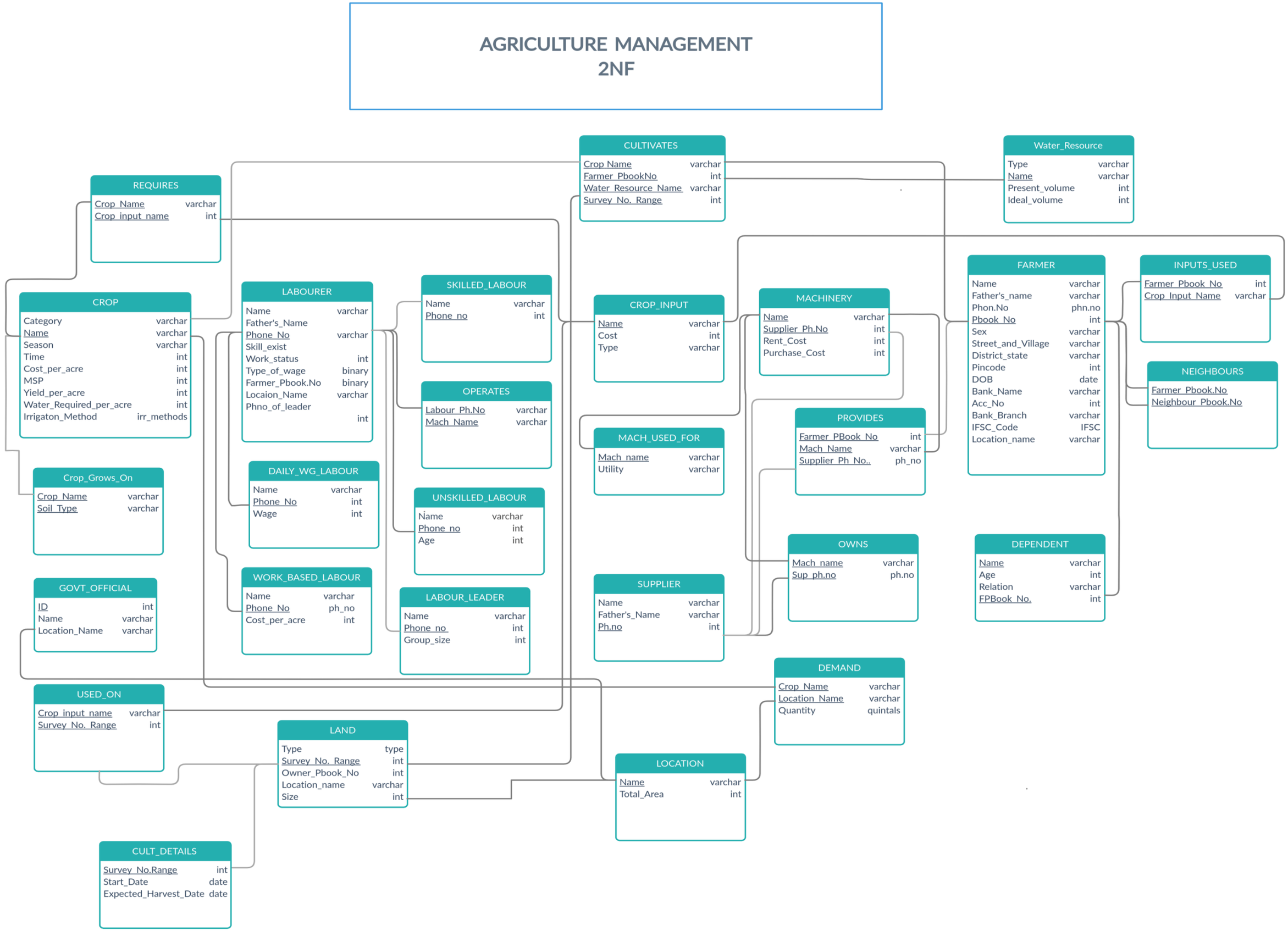
Team esabataD

Phase – 3 : Relational data model

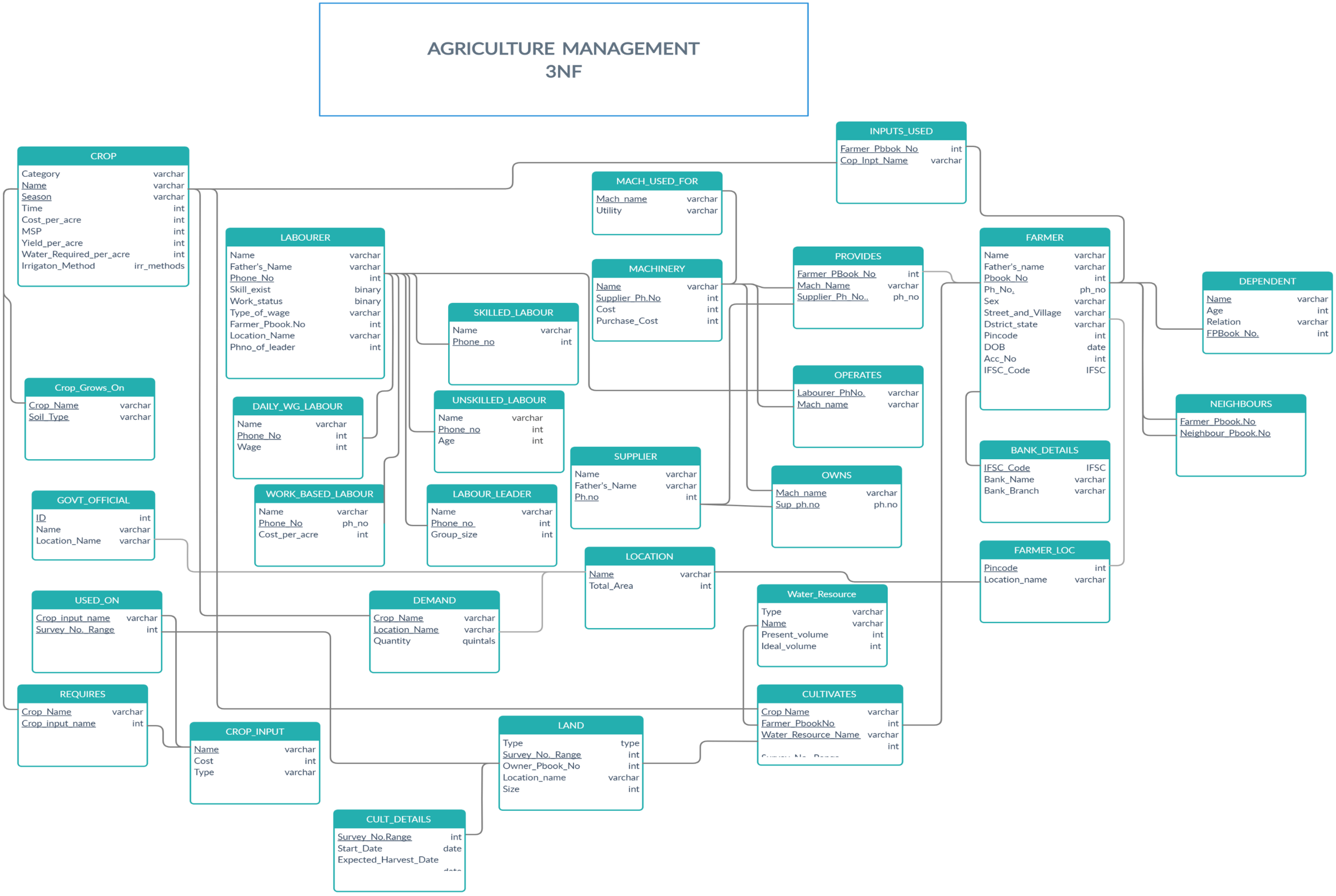
First Normal form:



Second Normal form:



Third Normal form:



Explanation:

ER – Relational model:

- Every entity in ER is converted into relation(entity-relation) and the key attribute in ER is converted into primary key of the relation.
- Multi-valued Attributes are converted into a separate relation.
- While handling 1:n/n:1 relations, an attribute is added to the entity-relation which is on the n-side of the relationship in ER model.
- While handling m:n relations, a new relation is created which consists of the keys of the participating entity-relations.
- For n>=3 relations in ER a new relation is created which consists of the keys of the participating entity-relations.
- Specialization and generalization (Here, in the case of LABOURER entity) separate relations are created for each subclass and name attribute is additionally included in all of them.
- Age attribute in FARMER relation is removed because it is redundant due to the presence of DOB attribute.

Relational Model to 1NF:

- 1NF is already satisfied as multi valued attributes are handled and there are no nested relations.

Relational Model to 2NF:

- Partial dependencies were identified in CULTIVATES relation giving rise to a new relation (CULT_DETAILS).

Relational Model to 3NF:

- Transitive dependencies in FARMER relation were handled giving rise to BANK_DETAILS and FARMER_LOC relations.

Note: Domains in the pictures are tentative.