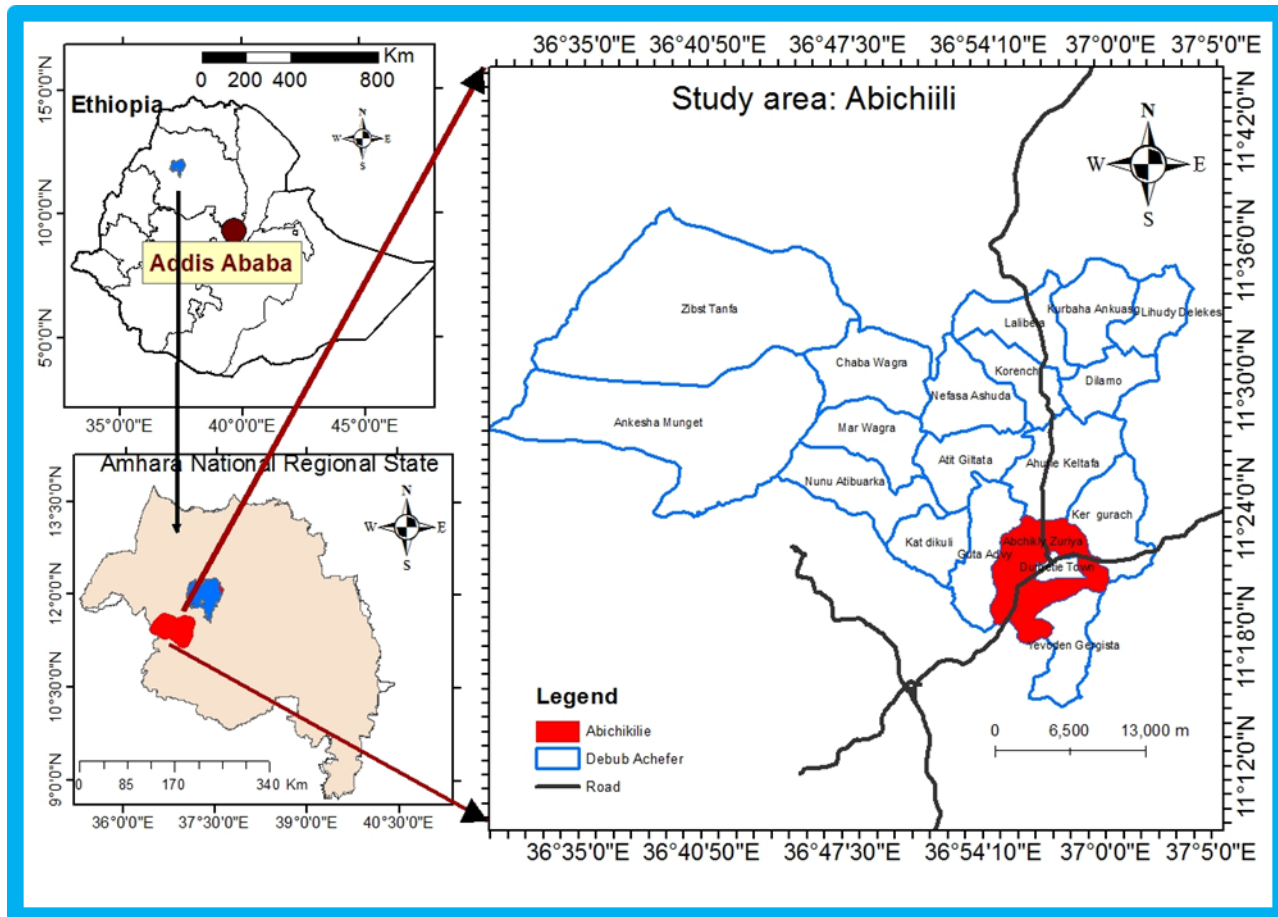


Circularity in Integrated Systems: Resource Recovery for Feed, Fuel and (Organic) Fertilizer Self-sufficiency in Ethiopia

South Achefer Case Study

Location of the study area



Description of the study area

Geographic position (UTM)

- Latitude: 11°12'0''-11°42'0''N
- Longitude: 36°35'0''E-37°05'0''E

Major soil types

- Nitisols
- Cambisols

Climate

Climate:

- Sub-humid
- Min $t^{\circ} = 12.1^{\circ}\text{C}$
- Max $t^{\circ} = 27^{\circ}\text{C}$
- Rainfall: 1499 mm
- Altitude: 1500 -2602masl



Crops in the study area

- Maize (*Zea mays* L.)
- Tef (*Eragrostis tef* Zucc.Trotter Trotter),
- Finger millet (*Eleusine coracana* L. (Gaertn),
- Faba bean (*Vicia faba*),
- Field pea (*Pisum sativum*)
- Chick pea (*Cicer arietinum*),
- Niger seed (*Guizotia abyssinica*),
- Line seed (*Linum usitatissimum*)
- Rape seed (*brassica capmestr*s).



Livestock

Cattle, sheep, goats,
poultry, mule, donkey,
apiculture

Products

beef, mutton, chicken,
milk, butter, local cheese,
honey



Forest trees

- Eucalyptus, *Croton macrosatchys*, *Cordia Africana*, wild trees



Products

- wood fire, timber, wood poles, honey, medicinal plants



Major crop management practices

- Composting,
- weeding,
- cultivation,
- zero tillage,
- minimum tillage,
- crop rotation,
- intercropping.



Manure used to prepare compost as input to potato and Rhodes grass

Why the project? Experience from CASCAPE



High potato yield-**high income**



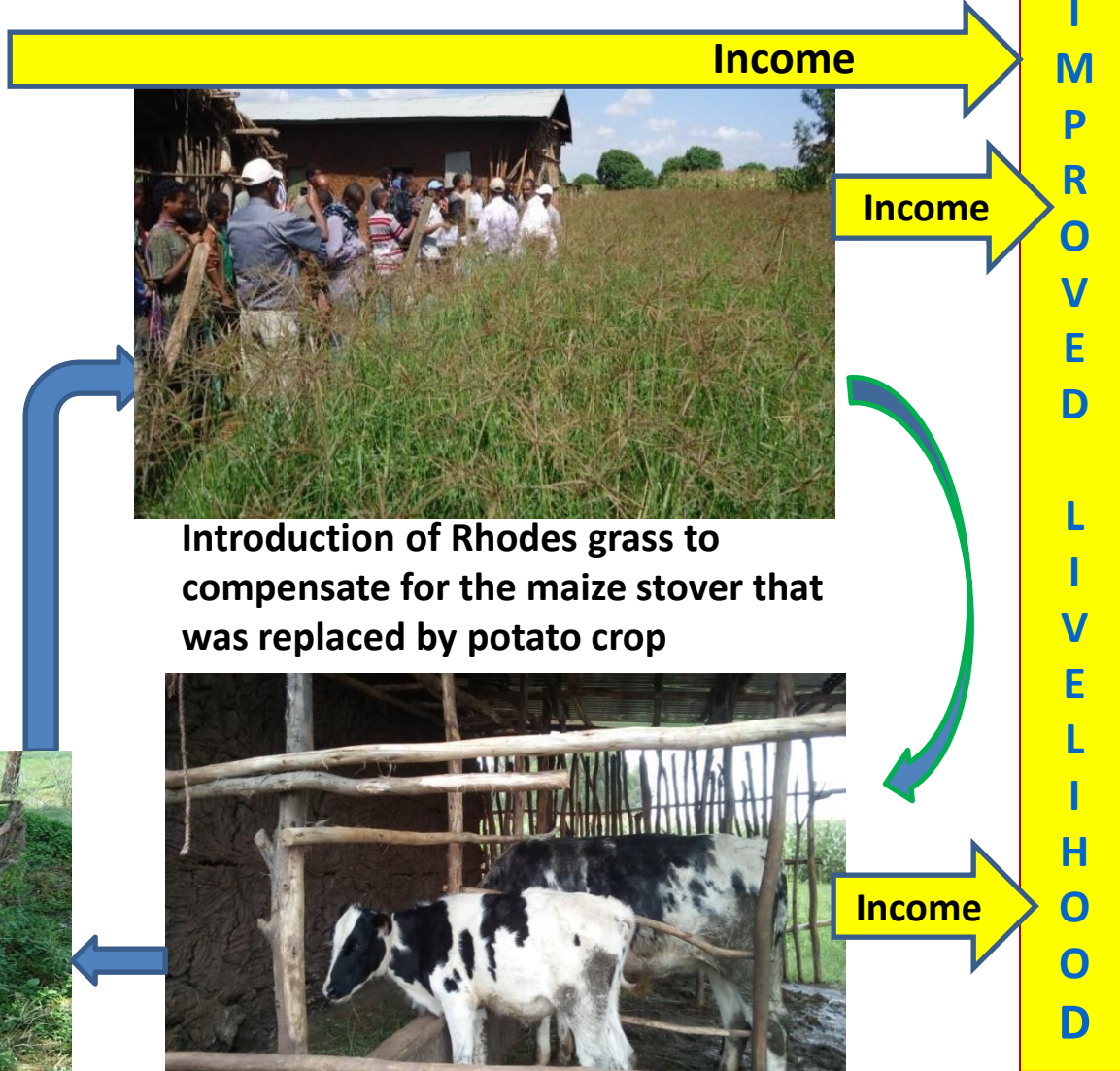
Manure used to prepare compost as input to potato and Rhodes grass



Introduction of Rhodes grass to compensate for the maize stover that was replaced by potato crop



Potato and Rhodes grass helped farmers to introduce high yielding dairy cross breeds-
More income from milk sale



Effects of ISFM on maize yield



Control



4 t/ha compost



8 t/ha compost



100% RNP



4 t/ha compost+50% RNP



4 t/ha compost+100% RNP

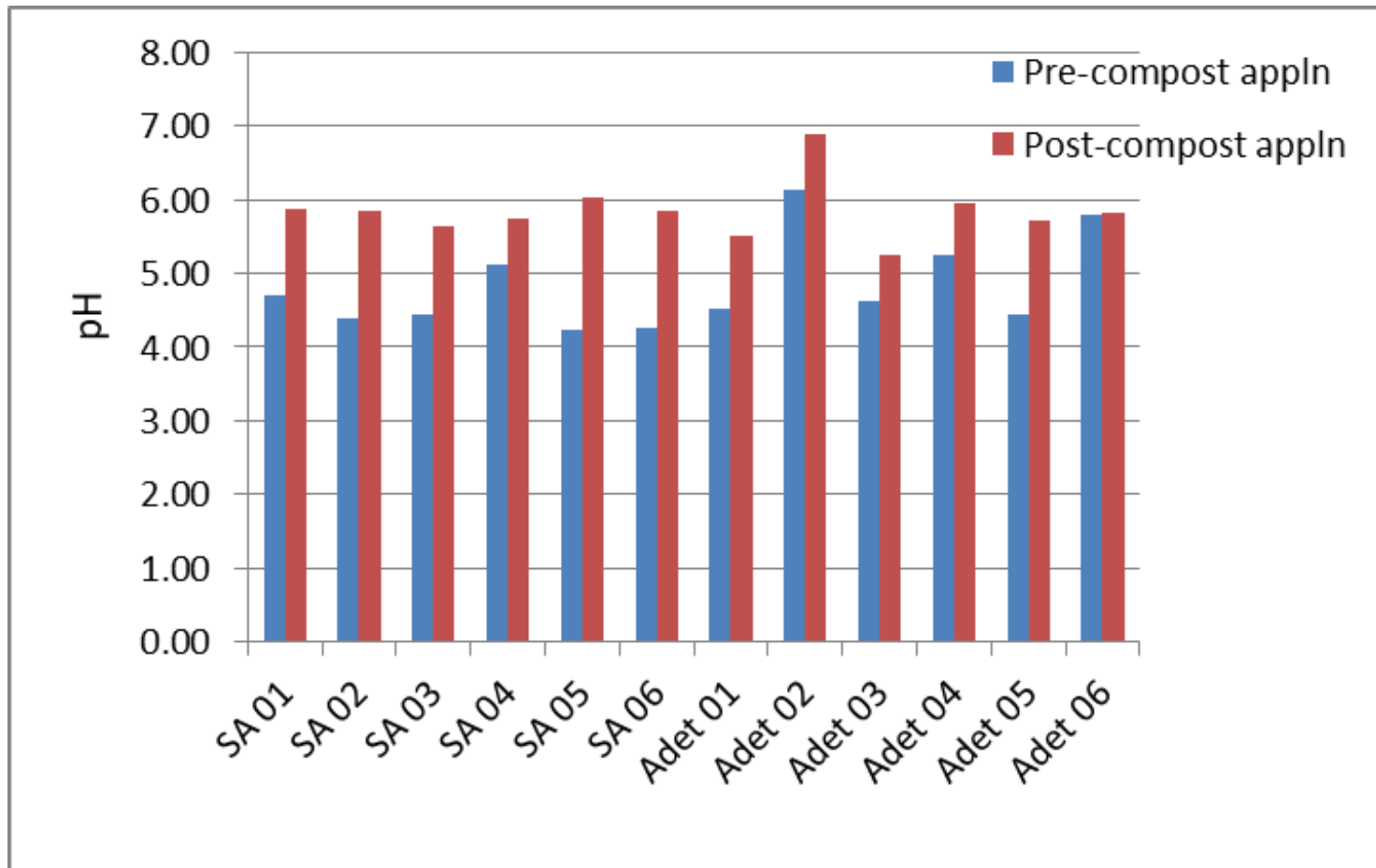


8 t/ha compost + 50% RNP

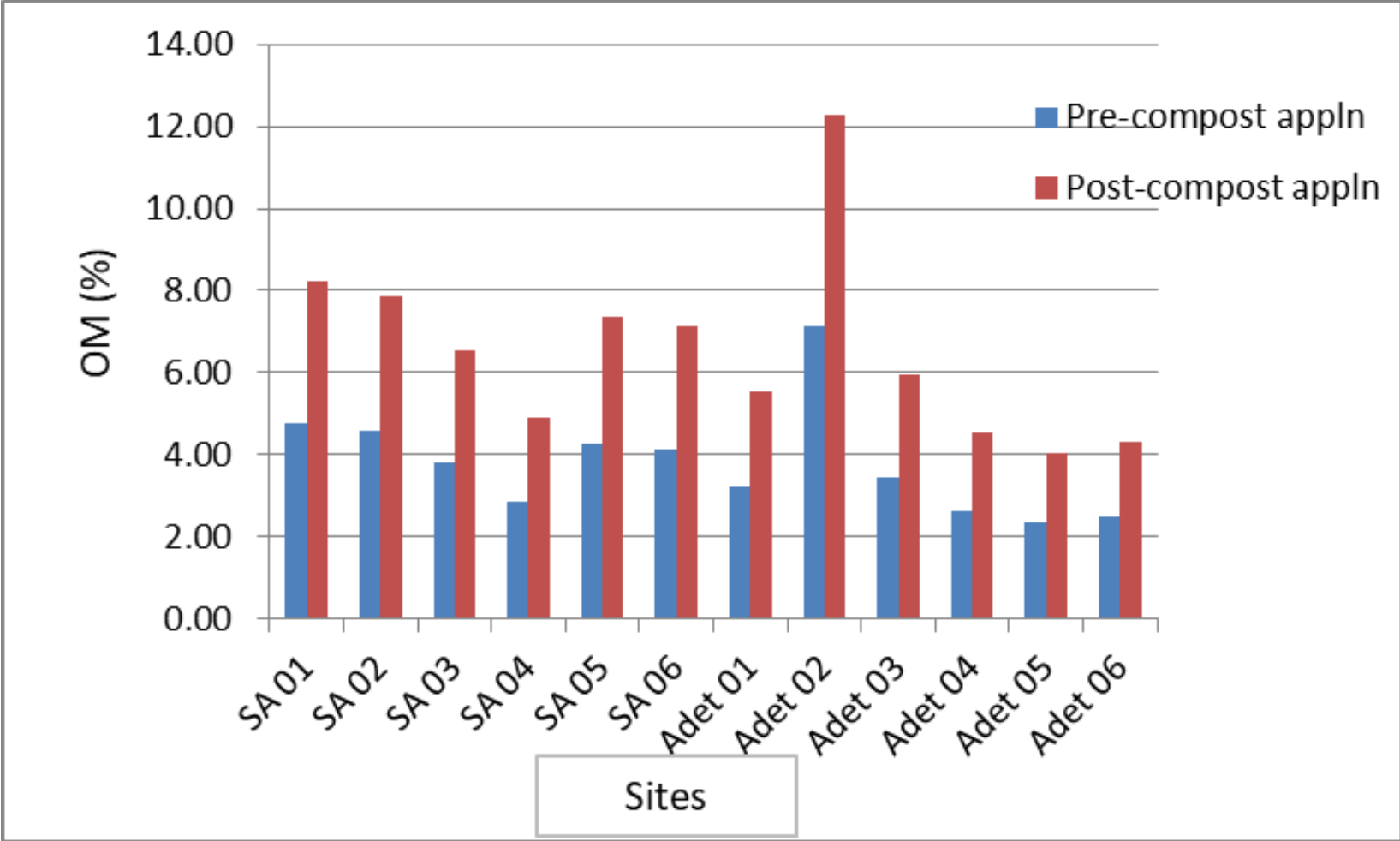


8 t/ha compost+100% RNP

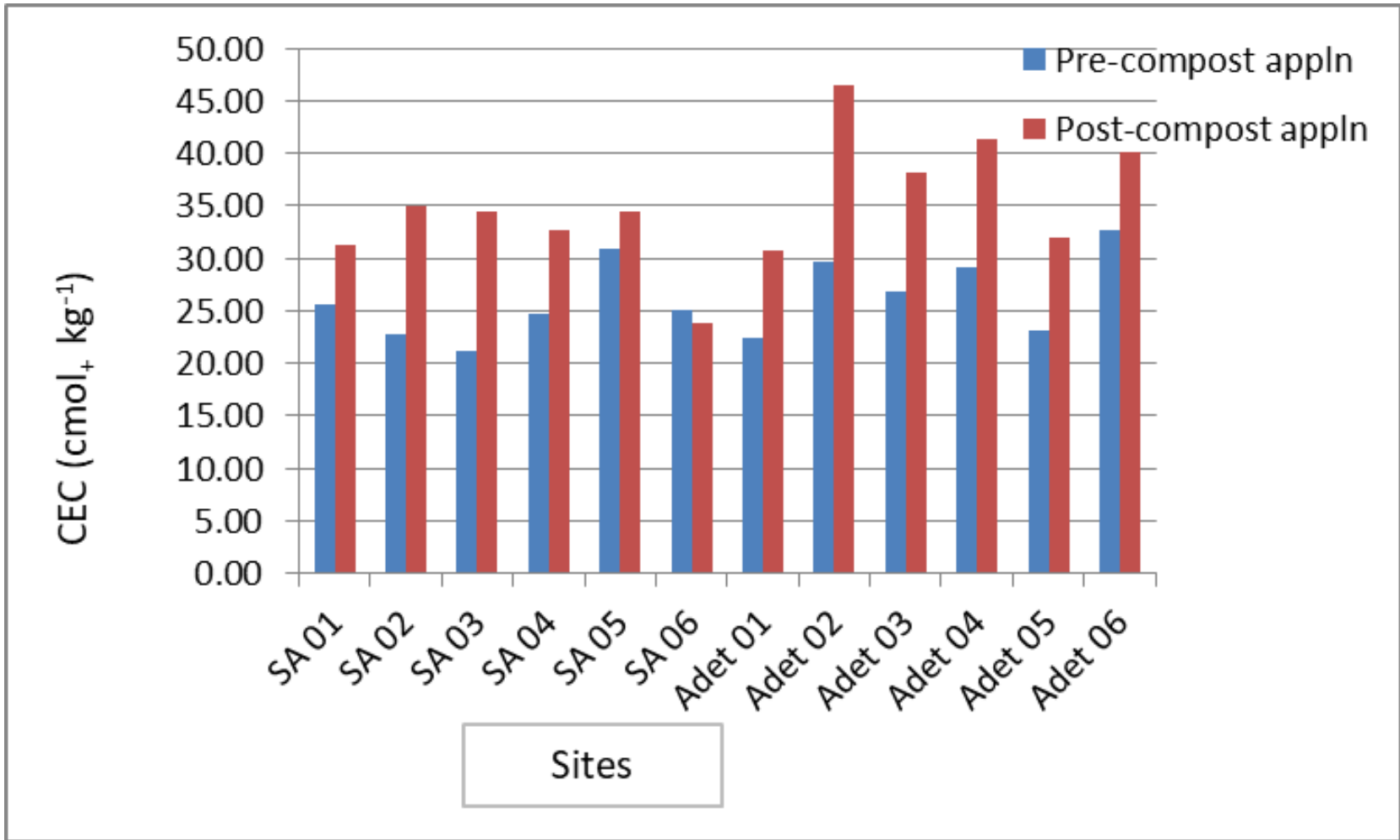
Changes in pH on farmers' fields (OTIPAVA)



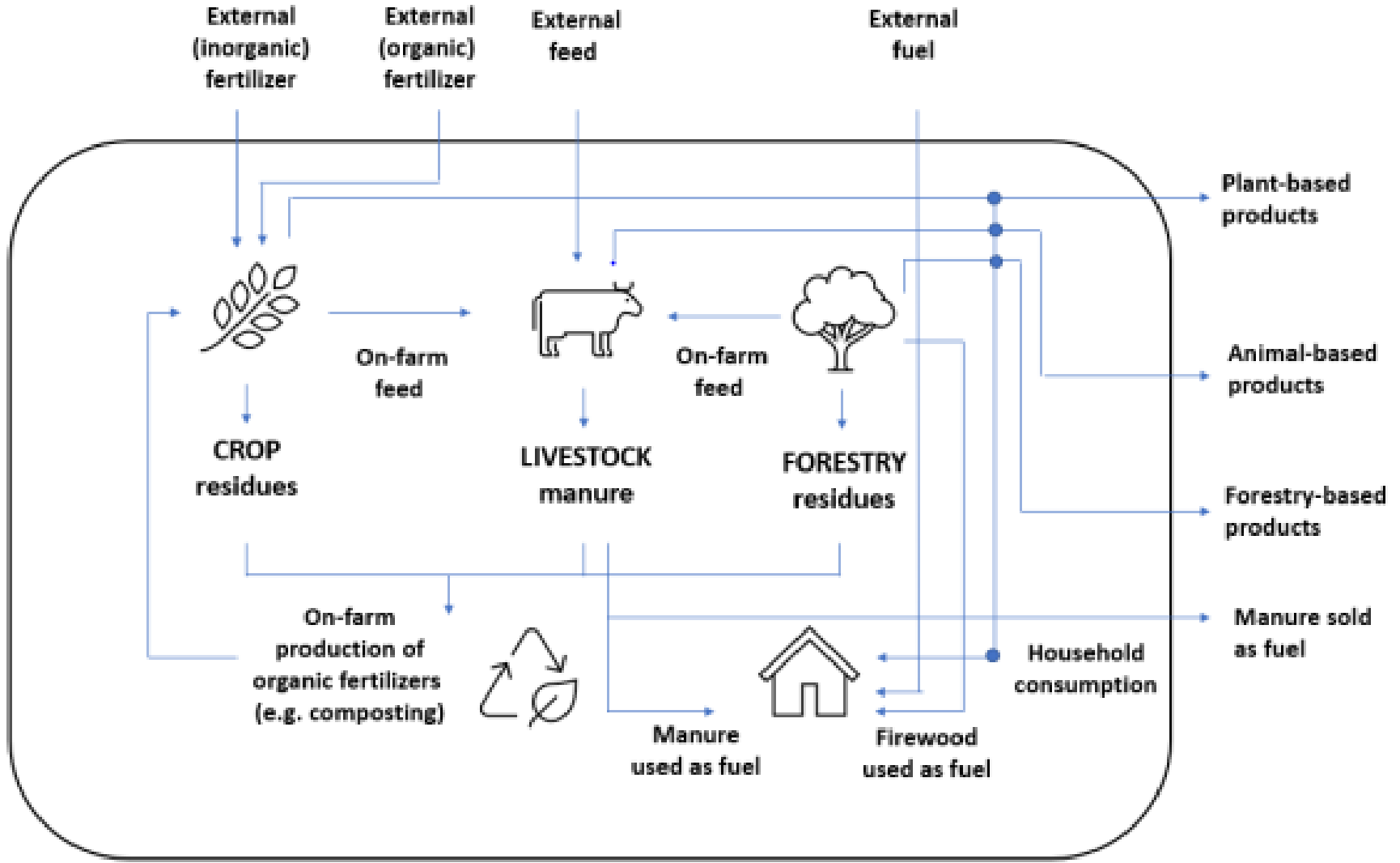
Change in OM on farmers' fields (OTIPAVA)



Change in CEC on farmers' fields (OTIPAVA)



In CFS project, we go from linear to circular!



Conclusion:

Working on circularity **contributes towards**

- feed and fuel recovery;
- fertilizer self sufficiency;
- food self sufficiency;
- livelihood improvement;
- Ecosystem restoration.

Suggestion:

Include a PhD candidate in the research



Thank you

**with greetings
from the palm city
of Bahir Dar at this
victory day of
March 02!**