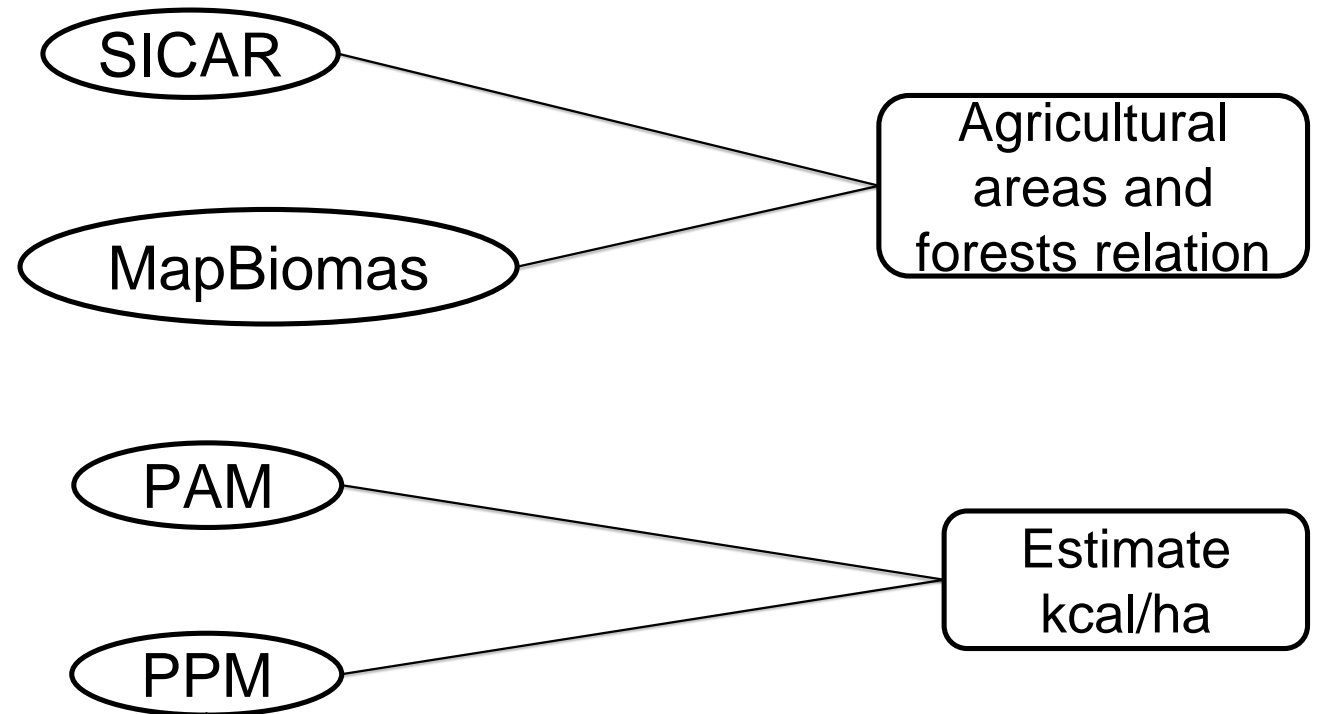


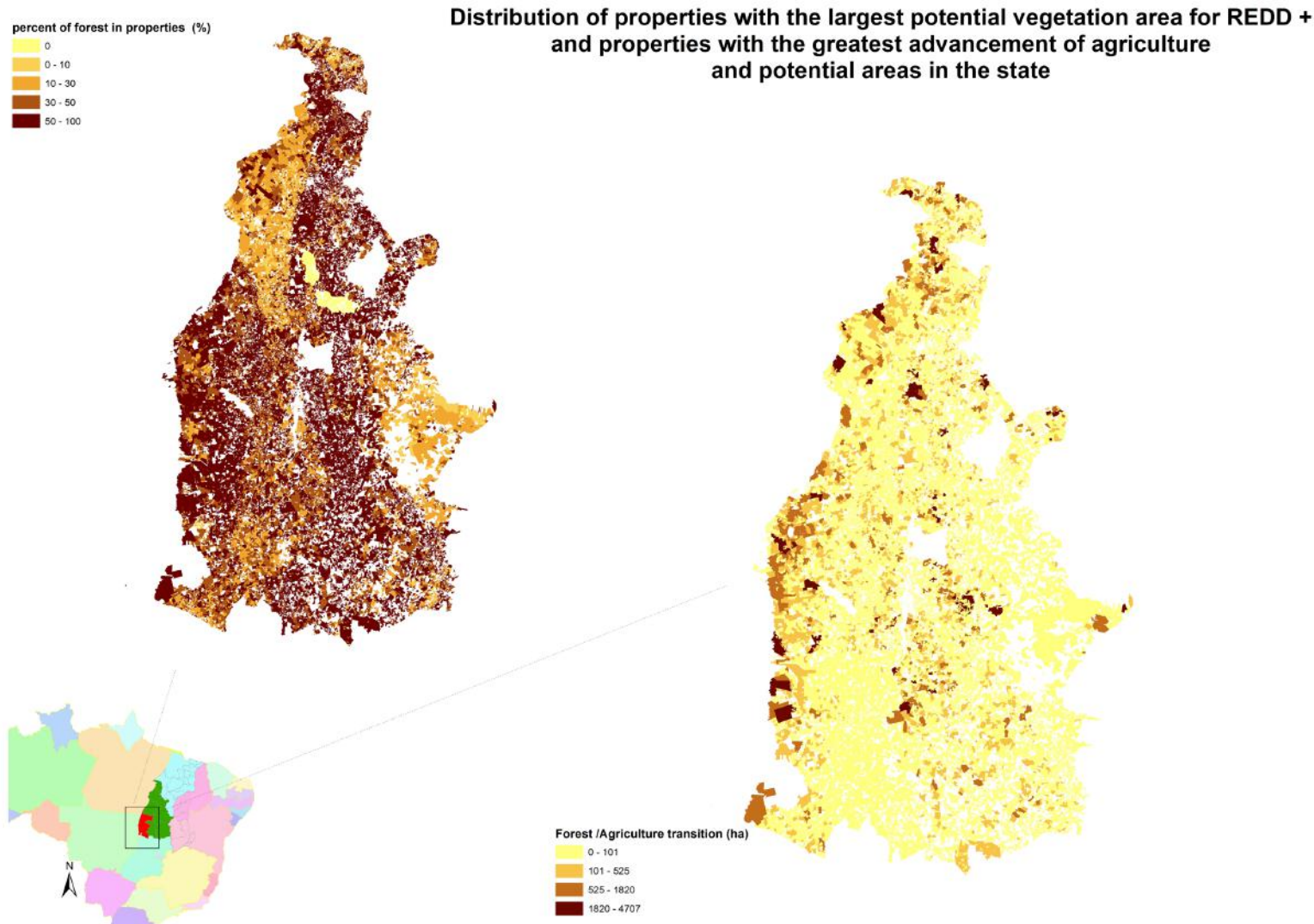
## Aim and Scope

- ❖ Deforestation contributes to climate change, so the REDD + mechanism seeks to preserve the forest in order to avoid greenhouse gas emissions and contributes to the maintenance of ecosystem services.
- ❖ Nowadays, the state of Tocantins is the area of agricultural and livestock expansion in Brazil, however, the total of its production is not entirely intended for the population's consumption.
- ❖ The objective of this work was to relate areas with potential for REDD + and their use in the generation of calories for human consumption through agricultural production.

## Methodology



## Results



Deforestation and farming areas sample

Micro region	Micro region area (km <sup>2</sup> )	CAR Properties	CAR Properties area (km <sup>2</sup> )	Forest area (km <sup>2</sup> )	Farming area total(km <sup>2</sup> )	Farming area in deforestation (km <sup>2</sup> )
17001	15.800	9.885	11.227,95	6.074,48	3.494,98	927,34
17002	26.510	7.693	21.476,36	8.866,37	10.740,43	808,67
17003	34.920	10.798	28.451,97	13.695,78	9.614,71	1.400,06
17004	51.730	5.540	23.498,47	13.324,43	6.957,37	1.449,63
17005	27.540	6.915	21.333,63	11.261,74	7.841,85	1.192,75
17006	21.240	8.009	13.504,94	7.995,27	2.857,73	541,59
17007	53.540	10.333	34.174,86	15.889,80	2.124,14	401,06
17008	47.220	11.611	30.894,06	17.598,54	6.283,16	951,25
<b>Total</b>	<b>278.500</b>		<b>184.562,25</b>	<b>94.706,39</b>	<b>49.914,37</b>	<b>7.672,34</b>

## Discussion e conclusion

- ❖ We estimate that in the period were produced  $9.00981 \times 10^{11}$  kcal in the state.
- ❖ According to analyzes around 13% of the production area was deforested in the same period.
- ❖ Drawing a parallel with that recommended by FAO, where the average energy requirement in the Brazilian diet is 2448 kcal per day per person, which produced energy would supply the need for 27221 people, ie 1.7% of the estimated population. for the year 2019.
- ❖ Given this scenario and the importance of preserving native vegetation, the data support the analysis between applying a PES mechanism to ensure preservation or continuing to practice.
- ❖ Food acquisition scenarios indicate that the growing Brazilian population by 2030 will require greater availability of beef, increasing the need for pasture area in the Cerrado region (149%), maintaining the same production pattern ie we need review this form the production in Brazil.

### References

- [1] Brasil. Submissão brasileira de nível de referência de emissões florestais para redução das emissões provenientes do desmatamento no bioma cerrado para fins de pagamentos por resultados de redd+ sob a convenção quadro das nações unidas sobre mudança do clima frel - cerrado. Ambiente, M.d.M., Ed. Brasília, 2016.
- [2] Ferreira, Y.; Soler, L.S.; Meira, M.; Pompeu, J.; Rodiani, R.; Almeida, C.; Ometto, J.P. Combining conservation and land regulation policies to map potential areas for REDD+ as PES mechanisms in cerrado. 2019.
- [3] SEMARH-TO. Term of reference to implement a state level system of reducing emissions from deforestation and forest degradation and enhancement of forest carbon stocks - redd+ in tocantins state. Resources, S.o.E.a.W., Ed. Palmas, 2017.
- [4] Guadalupe, V.; Sotta, E.D.; Santos, V.F.; Gonçalves Aguiar, L.J.; Vieira, M.; de Oliveira, C.P.; Nascimento Siqueira, J.V. Redd+ implementation in a high forest low deforestation area: Constraints on monitoring forest carbon emissions. *Land Use Policy* 2018, 76, 414-421.
- [5] Cattelan, A.J.; Dall'Agnol, A. The rapid soybean growth in Brazil. *OCL*, 25 (1), 2018.
- [6] SOUZA, C.; AZEVEDO, Tasso. MapBiomias General Handbook. MapBiomias: São Paulo, Brazil, p. 1-23, 2017.
- [7] CARVALHO, Aline Martins et al. Meat consumption in Sao Paulo-Brazil: trend in the last decade. *PLoS One*, v. 9, n. 5, p. e96667, 2014.