

Life Cycle Inventory for Agriculture Residues in Australia

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1 Introduction

This report outlines the inventory development for agricultural residues in Australia. Three different agricultural residues have been included through which are bagasse from sugar production, cotton seed cotton production is and straw from wheat production. Each of the products is a co-product of a different agricultural production system.

2 System boundary

The system boundary for the inventories begins with the preparation of land for planting including any management during the fallow period. It also includes all operations on farm and the production of farm machinery. Fertiliser and chemical production is included as well is this application on the ultimate fate of the chemicals applied. The system boundary ends with the production of the primary agricultural product in the production of the agricultural residue is a coproduct. The entire impacts on the production system are partitioned between the main product and the agricultural residue based on the relative economic value of each of the products.

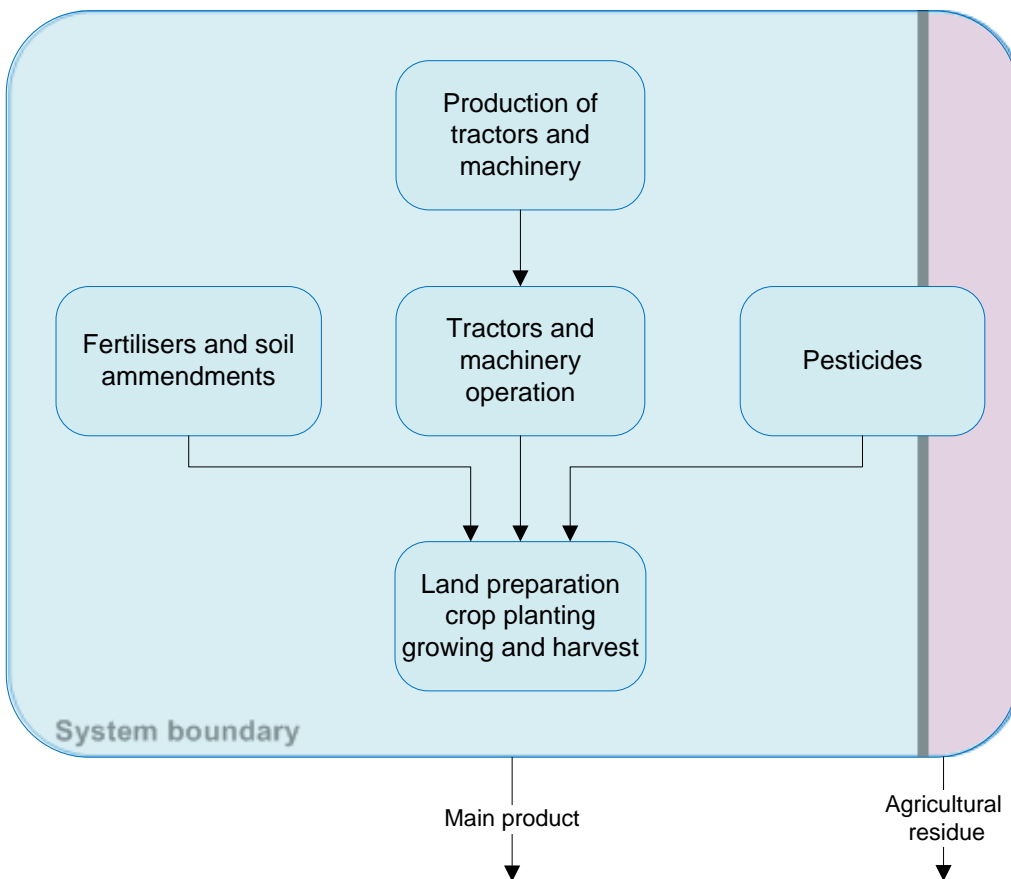


Figure 1 system boundary for maize production

3 Data Sources

The data sources for residue inventories are shown in Table 1 along with the associated main products from which the residues are derived.

Table 1 Data sources and assumptions for the maize production inventories

Agricultural residue	Primary product	Data source
Cottonseed	Cotton lint	(NSW Department of Primary Industries 2012; NSW Department of Primary Industries 2012) updated with more recent data in cooperation with Cotton Research Development Council.
Bagasse	Sugar syrup	(Renouf 2011) updated with more recent data as part of the AusAgLICI project
Wheat straw	Wheat grain	

In each inventories the assumptions regarding economic value used for allocation is documented. A carbon correction factor is also used to restore the carbon balance after allocation. This is required because the economic allocation does not correctly proportion the absorbed carbon dioxide in the crop.

4 Inventories

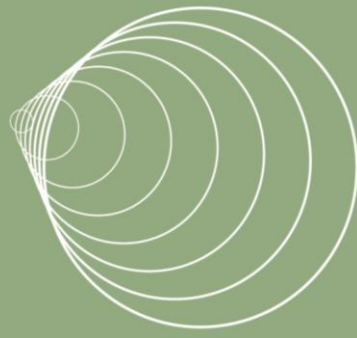
In spreadsheet “Residue Inventories V1.xlsx”

5 References

NSW Department of Primary Industries (2012). Dryland Cotton (Roundup Ready Flex® Bollgard II®) Farm Enterprise Budget Series - Northern- West NSW Summer 2012-2012-13, NSW Government.

NSW Department of Primary Industries (2012). Surface Irrigated Cotton (Roundup Ready Flex® Bollgard II®) Farm Enterprise Budget Series - Northern Zone Summer 2012-2012-13, NSW Government.

Renouf, M. (2011). Environmental evaluation of product diversification in sugarcane systems using life-cycle assessment: An Australian case study. School of Geography, Planning & Env Management. Brisbane, The University of Queensland. **PhD Thesis**.



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