

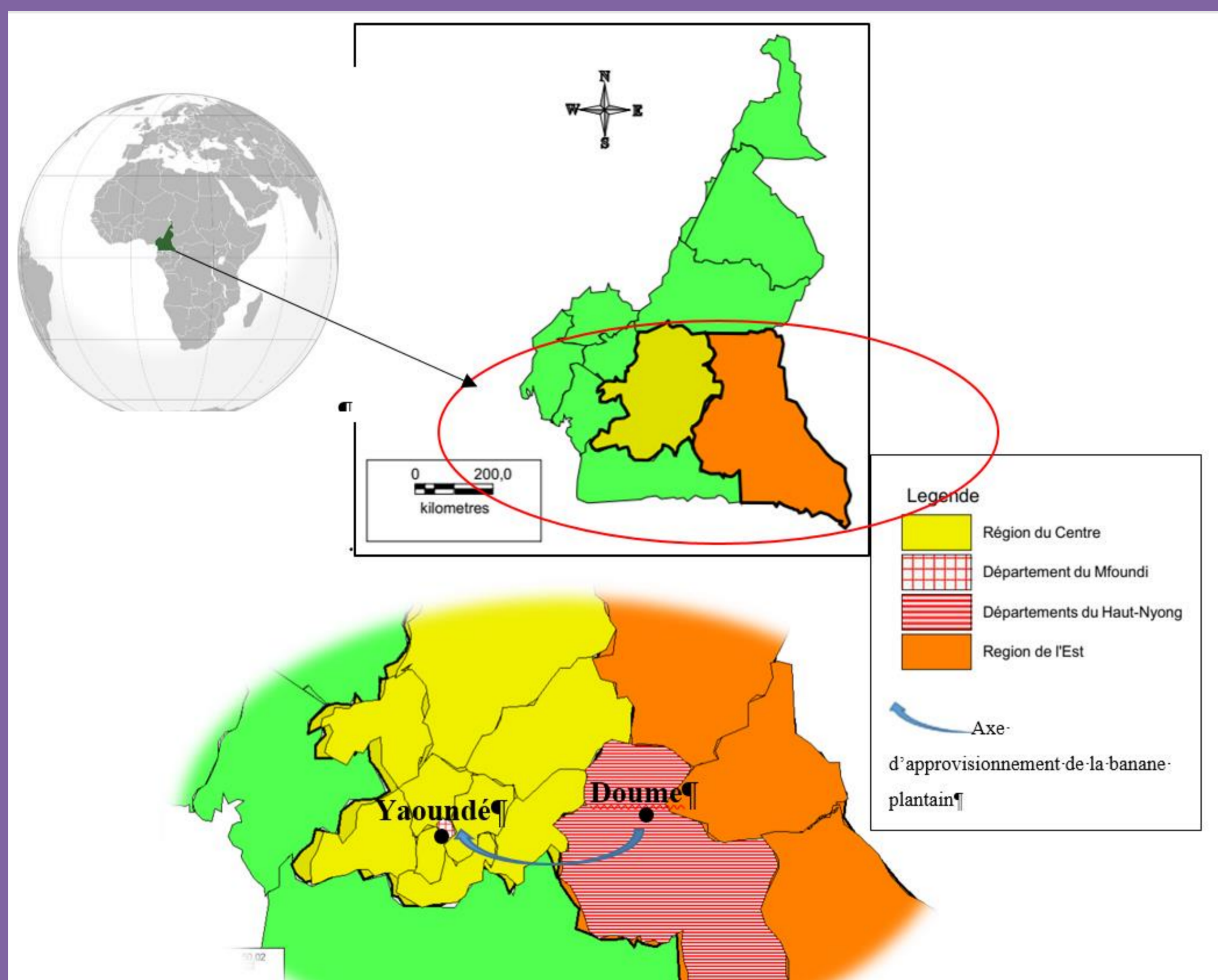
How does Transport and Handling Affect the Quality and Availability of Fruits and Vegetables in Cameroonian Market and Household? Case Study of Plantain (*Musa paradisiaca*)

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Introduction: As the population grows, the state of famine in the world also continues. In 2019, approximately 690 million people in the world suffered from hunger, thus 8.9% of the world population. Africa is the most affected region and where the situation continues to worsen, as 19.1% of its population is undernourished (FAO *et al.*, 2020). To ensure global food security in 2050, agricultural production should increase by more than 70%. Yet 24% of agricultural production is lost after harvests across the world (Kitinoja *et al.*, 2018). In Sub-Saharan Africa, the proportion of post-harvest losses is estimated between 15 to 50% of production (FAO, 2010). 61% of these losses are attributable to PPRs with in particular 37% relating to storage and handling, 7% to processing, 13% to marketing and only 5% related to consumption (Bruno *et al.*, 2016). Within the production areas in Cameroon, plantains rank among the most important sources of income for producers; it's even by far the main one for the populations of certain production basins, like the basins of Ntui in the Center Region, and Doumé, Dimako, Abong-bang in the East region (Cauthen *et al.*, 2013). Plantain is one of the staple foods in the southern regions of the country (Fouepe *et al.*, 2016) and the plantain sector, for its part, is one of the main agricultural sectors that contribute to safety food in Cameroon such as corn, sorghum, rice, cassava, plantain, oil palm and sweet potato (INS, 2017). Regarding the plantain value chain, there are no updated and official data that can be used to reliably assess the extent of postharvest losses in this sector. However, according to Kitinoja *et al.* (2018) the quality of the information available is not always sufficient to systematically identify the appropriate solutions to reduce losses.

AIM: Characterizing the nature and level of Postharvest losses from the plantain handling system and modes of transport on the Mfoundi supply circuit from a Doumé production basin in the Eastern Region of Cameroon.

STUDY AREA:



Gegraphical location of research site

RESULTS:



Collection and transportation of clusters from production basins for the city of Doumé



State of practicability of roads serving production basins

MATERIALS AND METHODS:

The assessment of losses was carried out via indirect and direct methods such as: Semi-structured interviews with groups of stakeholders (producers/sellers, transporters and managers/sellers including warehouse managers, wholesalers and retailers). Physical counting of lost regimes, damaged or attacked fingers etc. Specific questionnaires sent to each actor in the supply chain; Observation and relevant analyzes. The mode of transport studied is road transport. For each means of transport studied, it was a question of: Characterizing it by highlighting its condition, the conditions of transport of the plantain (mode of loading, method of conditioning, management of mechanical shocks, etc.); Evaluate its impact on the fingers and bunches of plantain; The transport conditions were assessed on the basis of the relevant and succinct observations of the mode of loading in comparison with the standard mode of transport of plantain; Physical damage to fingers and bunches of plantain was observed on the basis of the assessment of the physical characteristics undergoing the bunches.

CONCLUSION: This research showed that Road transport is the main mode of transporting plantains from the Doumé production area to the city of Yaoundé. Several means of transport are used for this purpose depending on the condition of the road and the final destination of the product in the marketing circuit. The poor rural roads serving the production basins make it difficult to sell production both in the dry season and in the rainy season. To cope with this, local transporters use on-board means, in particular reformed vehicles with chassis on high or motorcycles for even more difficult areas. However, these on-board facilities do not offer any guarantee on the safety of the agricultural products transported. Thus, the bunches are subject to multiple fractures and mechanical shocks which impact on the visual appearance of the product and accelerate its deterioration.

REFERENCES:

- Bruno, S.; Karl, M.; Maria, H.; et Tanja, P. W. 2016. « Pertes alimentaires-Pour une utilisation durable des ressources du champ à l'assiette ». Ministère fédéral de la Coopération économique et du Développement (BMZ) Division 122, « Développement rural, droits fonciers, forêts ». GIZ. <https://www.giz.de/fachexpertise/downloads/giz2016-fr-dossier-pertes-alimentaires.pdf>.
- Cauthen, J.; Dan J.; Mary, K. G. and Leigh, A. C. 2013. « Banana and Plantain Value Chain: West Africa<P> ». EVANS SCHOOL POLICY ANALYSIS AND RESEARCH (EPAR 3 (239): 25. <https://doi.org/10.21955/gatesopenres.1114922.1>.
- FAO; IFAD; UNICEF; WFP; and WHO. 2020. The State of Food Security and Nutrition in the World 2020: Transforming food systems for affordable healthy diets. The State of Food Security and Nutrition in the World (SOFI) 2020. Rome, Italy: FAO, IFAD, UNICEF, WFP and WHO. <https://doi.org/10.4060/ca9692en> Also Available in: Chinese Spanish Arabic French Russian. Nyebe M.I.G. 2012. Analyse des coûts de transformation du poisson et du lait frais dans des villes de moyenne et grande importance du Cameroun. Mémoire de fin d'étude présenté en vue de l'obtention du diplôme d'Ingénieur Agronome. Université de Dschang, FASA, Département d'Economie Rurale.108p.
- FAO. 2010. « Programme continental de réduction des pertes après récolte Cameroun ». Document de travail Rapport No: 09/018 FAO-BAD CMR. Rome-Italia: FAO. www.fao.org/3/a-au869f.pdf.
- Fouepe, G. H. F.; Folefack, D. P.; Pane, P. Z.; Biboi, A. et Noupadja, P. 2016. « Transformation et commercialisation des chips de banane plantain au Cameroun : une activité artisanale à forte valeur ajoutée ». International Journal of Biological and Chemical Sciences 10 (3): 1184-1198-1198. <https://doi.org/10.4314/ijbcs.v10i3.24>.
- INS. 2017. « Annuaire statistique 2017: Agriculture ». http://slmp-550-104.slc.westdc.net/~stat54/downloads/2018/CHAPITRE_13_AGRICULTURE_17.pdf.
- Kitinoja, L.; Vijay, Y. T. and Amanda, B. 2018. « Challenges and opportunities for improved postharvest loss measurements in plant-based food crops ». Journal of Postharvest Technology 6 (4): 16-34.