

Use of Theory of Change (ToC) as a methodological approach to evaluate the papaya Maradol Regional Development Program in the Mixteca Poblana region

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ABSTRACT

Objective: To determine the extent to which the use of the Theory of Change (ToC) as a methodological approach is appropriate to assess the medium and long term effects generated by the Maradol Papaya Program in the Mixteca Poblana region (Puebla, Mexico).

Design/methodology/approximation: A case study was conducted with qualitative approach with a phenomenological approximation directed at the validation of the ToC as methodological tool for the assessment of programs, through Documental Research methods, observation and interviews with producers and key informants for the study.

Results: The design of the route or pathway of change allowed a punctual definition of the key variables for its operation and measurement as part of the assessment exercise. The use of qualitative methods (in-depth interviews) allowed an appropriate valuation of qualitative variables, such as learning, identification of quantitative variables (production volumes, production costs, etc.) that can be made with conventional methods (questionnaires) without this representing any methodological conflict.

Limitations on the study/implications: Since it is a case study, its generalization is not appropriate. However, there are elements that can be suggested as a general premise, such as the recommendation of the use of mixed methods in the assessment of programs and projects.

Findings/conclusions: The Theory of Change (ToC) is a valuable tool in identifying change variables through the design of the route or pathway change; however, this exercise has great validity and wealth if it is constructed in a participative way. The use of mixed methods (quantitative and qualitative) is suggested for this type of assessment.

Keywords: Theory of Change, program assessment, Maradol papaya.

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INTRODUCTION

In the Mixteca Poblana region (Puebla, Mexico), there is not a great diversification of crops, although the region has adequate soil and climate conditions for it. Facing this situation, strategies were established to change the existing social situation, one of them being the Maradol papaya Regional Development Program in the Mixteca Poblana.

Since August of 2002, Fundación Produce from Puebla has carried out an Integral Program for training, technical assistance, seedling production, fruit production, post-harvest management, and commercialization of Maradol papaya (*Carica papaya* L.) in the Mixteca Poblana region, supported by several institutions and taking advantage of the soil and climate conditions (Hernández, 2004; Jiménez, 2013). The proposed study contributes to the knowledge of the impact of this production model in the municipalities of the Mixteca Poblana where the Program was implemented, and seeks to determine the validity of the use of the Theory of Change as a methodological approach for this type of assessment. Based on this, the study determined the extent to which the ToC is useful to obtain data and to analyze results related with the Program's quantitative variables such as income, costs and others, in addition to defining the way in which the use of the ToC complements the conventional assessment approach, centered on the use of questionnaires with a mainly quantitative approach.

MATERIALS AND METHODS

A qualitative approach was used; the scope is the Mixteca Poblana region during the 2020-2021 period; the target population was Maradol papaya producers, men and women who are part of a Crop Development Program. The population of study was n=16 producers, the design used is phenomenological and case study. The variables were technological change, economic income, generation of family jobs, and decrease in temporary family migration. Given the qualitative nature of the study, the data were obtained through in-depth interviews, which were applied during the period of March to April, 2021. An interview guide was designed which was applied to producers to obtain information. The interviews were recorded and systematized through transcriptions that served for data analysis using the ATLAS.ti software. To implement the Theory of Change approach, a design of the pathway of change was made, as described in the next section, which was used to determine the variables and to explore deeply during the interviews.

RESULTS AND DISCUSSION

The fundamental basis of the assessment exercise from the approach of the Theory of Change is the construction (ideally in a participative way) of the so-called "route of change" or "pathway of change". This exercise consists in the proposal of a chain of results, going from the levels of products-effects-impact to complete the visualization of the change expected in terms of results or variables of change, which at the same time should be set out in a way that they can be measured in an assessment exercise. In this sense, the pathway of change represents the logical model of change expected, so that it allows the identification of variables of change that are relevant for their measurement in the assessment exercise (Weiss, 1995). Figure 1 shows the result of the construction exercise of the pathway of change for the Maradol papaya program in the Mixteca region. The products signaled that correspond to a first level of results were all given to the beneficiary population during the project's implementation period. The next level of results, corresponding to the effects, was developed through a certain period of time, and some were maintained until today as will be evident further ahead.

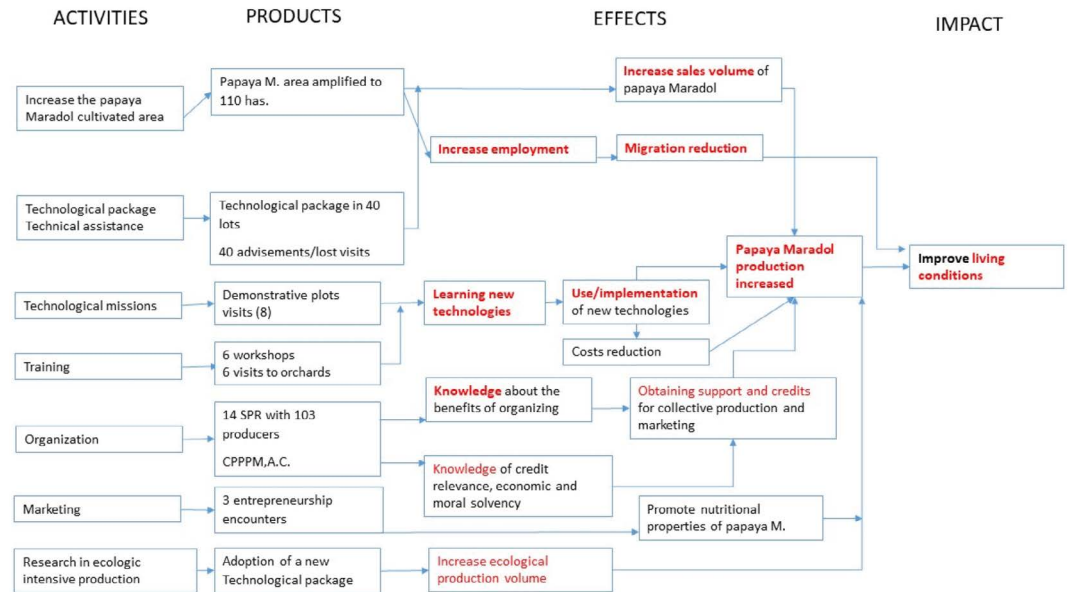


Figure 1. Logical model (route or pathway of change) of the Maradol papaya program in the Mixteca Poblana region. Source: Prepared by the authors.

Evidently, and from a systemic perspective, new effects and several elements of the context which have contributed to the expansion, or have limited these effects, emerged. These elements correspond to the changes derived from public policies, public administrations, the macroeconomic context, as well as from market flows, in addition to all the elements that are found outside the control of the program and actors. In order to respond to the question related to the relevance of the use of the ToC to assess the program, it is necessary to consider the nature of the variables to be measured. Variables such as “increase in production”, “volume of sales”, and “increase in levels of employment” are variables of a merely quantitative nature, so their measurement is relatively easy to record. However, variables such as “use/implementation of technologies”, “learning”, and “knowledge” are rather more complex, and therefore, their measurement corresponds to this complexity. To be able to conduct an exercise considering qualitative data collection, the study began by making a proposal of questions that allow the construction or operationalization of the variables in question, and thus to be able to value the relevance of the use of the ToC in assessment exercises.

Implementation of new technologies

The first variable to measure was the use/implementation of new technologies, which corresponded to the idea of “technology adoption” and which was addressed by addressing which components of the technological package were implemented, which were not, and why it was not done. Therefore, the relevant question is: Is there a relation between the main technological changes promoted by the Maradol Papaya Regional Development Program in the Mixteca Poblana region, in relation to the change of income, employment and migration between participating families from the Mixteca Poblana region, during the 2002-2008 period?

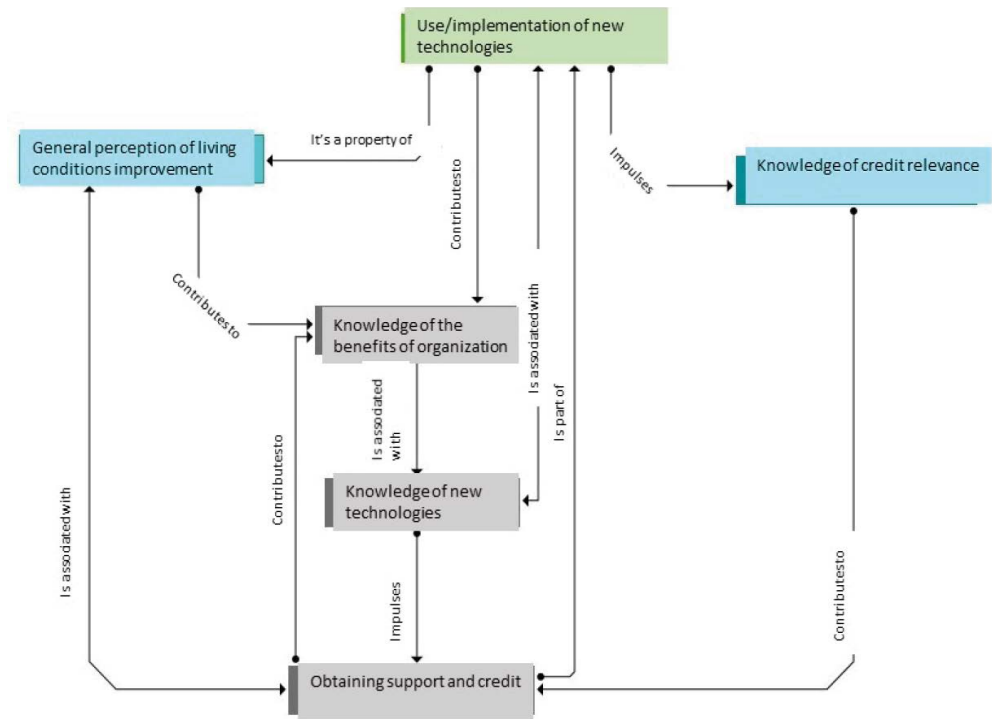


Figure 2. Semantic network for the use/implementation of technologies. Source: Prepared by the authors.

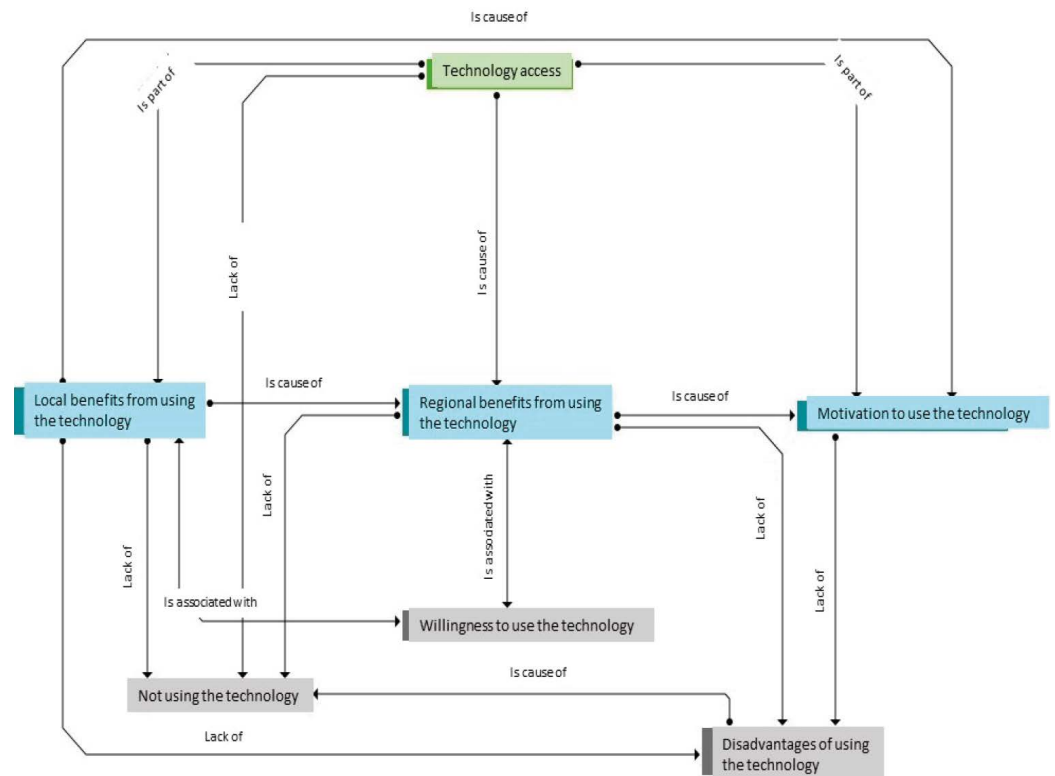


Figure 3. Semantic network for access to technologies. Source: Prepared by the authors.

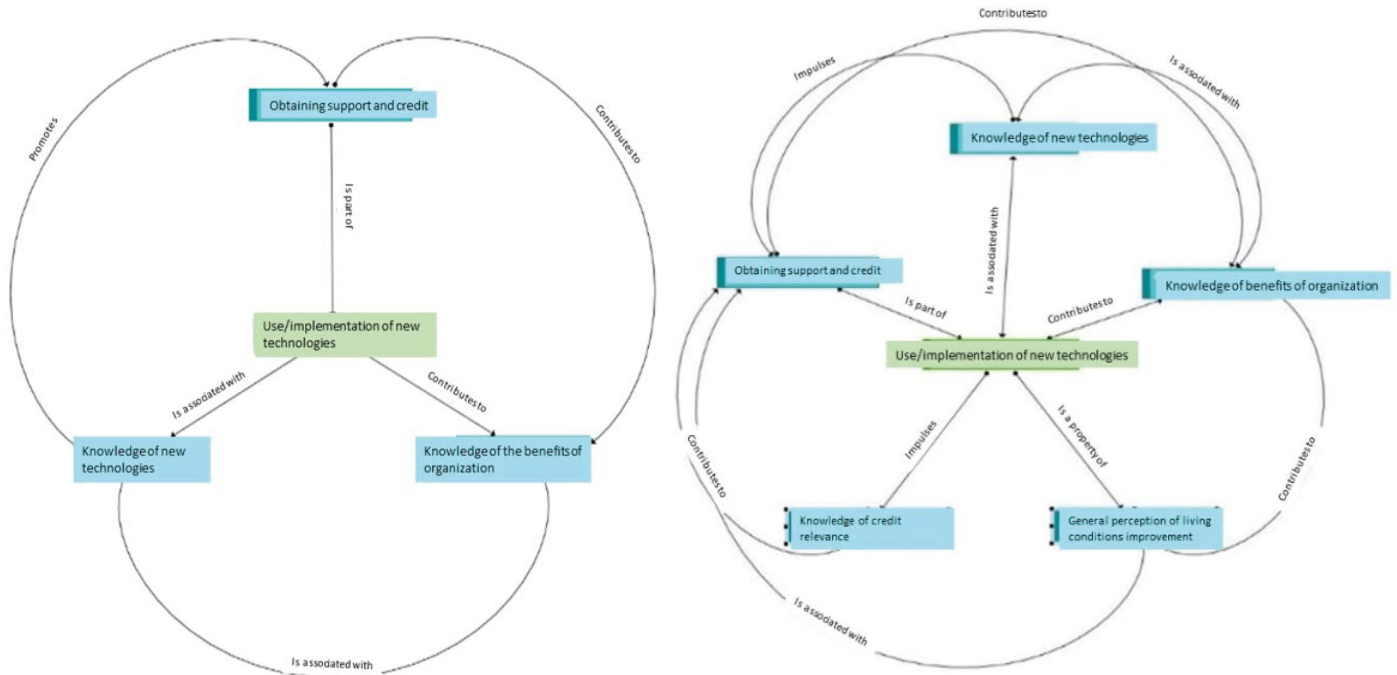


Figure 4. Semantic networks A and B for the use/implementation of technologies. Source: Prepared by the authors.

According to the analysis of semantic networks of the interviews performed, in the case of the use/implementation of new technologies, it is a property for the perception of improvement of living conditions and it promotes knowledge of the importance of credit, contributing to knowledge of the benefits of being organized and is associated to knowledge of new technologies. At the same time, the perception of the improvements of living conditions contributes to knowledge of the benefits of being organized. Knowledge of the importance of credit contributes to obtaining supports and subsidies and credit, and knowledge of the benefits of being organized is associated to knowledge of new technologies, which at the same time promotes obtaining supports and subsidies and credit (and is part of the use/implementation of new technologies).

Access to technology is part of the local benefits of use of technology and motivation to use said technology, and it is a cause for the regional benefits of its use. The local benefits contribute to regional benefits and they are cause for the motivation to use the technology, and this is associated with the willingness to retake the technology, while the lack of access has abandonment as consequence and causes disadvantages in the use of technology.

Technological changes

For this point, the following question was asked: Which are the main technological changes adopted by the family and the results obtained at the level of production with the Program?

NETWORK A. Use/implementation of new technologies: it is directly associated with knowledge of new technologies, and also with knowledge of the benefits of being organized which promotes obtaining supports and subsidies and credit, which in turn contributes to

knowledge of the benefits of being organized. Use/implementation of new technologies contributes to knowledge of the benefits of being organized that is associated to knowledge of new technologies.

NETWORK B. Use/implementation of new technologies drives the knowledge and importance of credit, contributing to obtaining supports and subsidies and credit, which promotes knowledge of new technologies. Use/implementation of new technologies contributes to knowledge of benefits of being organized which is associated to knowledge of new technologies. Use/implementation of new technologies is a property of the general perception of improvements in the living conditions that contribute to knowledge of the benefits of being organized, which contributes to obtaining supports and subsidies and credit. Finally, the main technological changes established (Figure 5) signal that the three main ones are the use of new varieties that are more resistant to virosis. Also, when the papaya tree has enough production, the plants with virus are eliminated. Finally, if a plant is sown, the buyer is not interested in the shape of the fruit, in addition to the seed having a considerable cost.

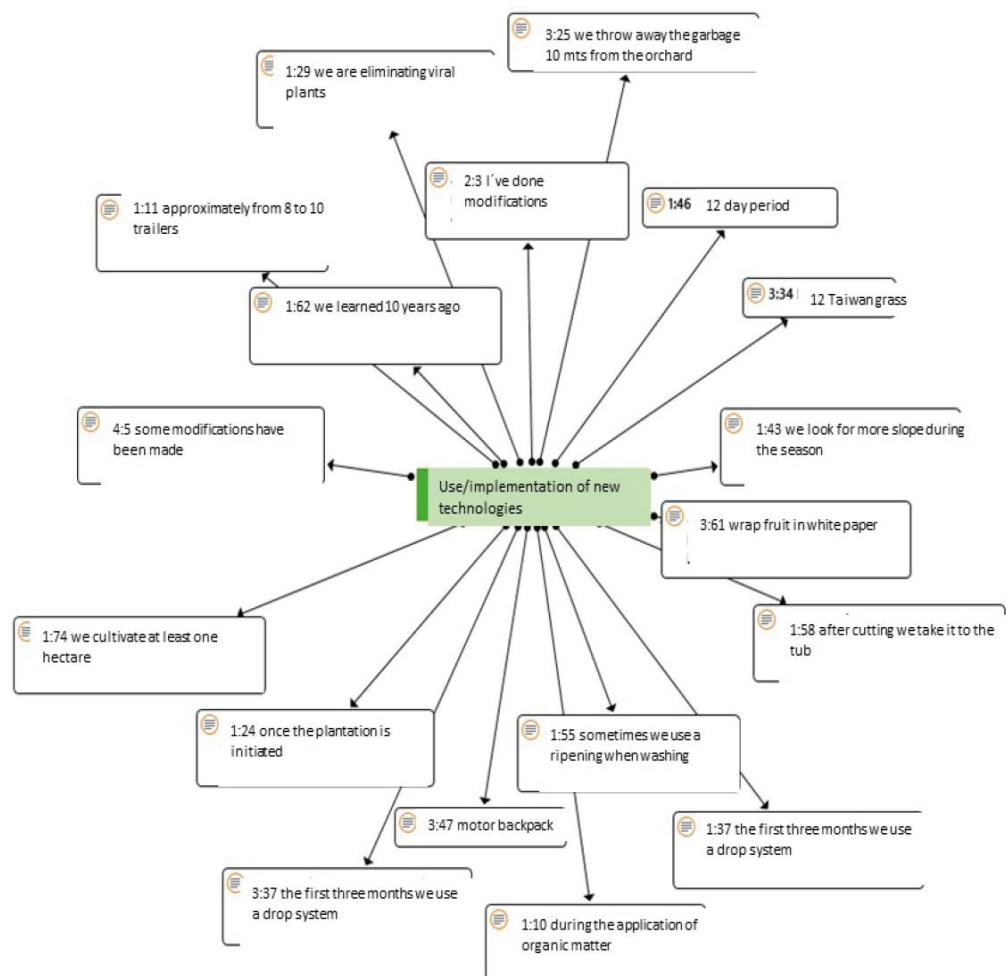


Figure 5. Main technological changes established. Source: Prepared by the authors.

In general, it is considered that the ToC is a valuable tool for the assessment of programs and projects such as the Maradol papaya Program in the Mixteca Poblana, if the following conditions are fulfilled:

Participation. The wealth of use of the ToC comes from the diversity of perspectives during the design stage of the pathway of change (Aspen Institute, 2004), as well as the identification of variables and actors (men and women) related to it, which is why with more diversity, inclusion and tolerance in the participation there will be greater wealth in the results. For the case of this exercise, the pathway of change was designed a posteriori as part of this study and was only validated with some key actors, which does not invalidate the exercise, but it does limit it to a unique perspective. Therefore, application of the ToC and its components is recommended, based on a mapping of actors that allows the identification of all the interested parties and their inclusion (Retalaza, 2010; Rogers, 2000).

Nature of the variables. Depending on the nature of the variables, the ToC has more or less relevance. In this sense, to identify and measure quantitative variables, it does not contribute more than any other assessment approach could. However, regarding precisely the dialogue process of the identification and selection of relevant variables, the ToC is more than appropriate, since it promotes a multiplicity of perspectives and their non-numerical valuation (qualitative), which is pertinent for variables such as learning, knowledge, and others.

Type of assessment. The ToC is relevant to assess results, particularly to assess effects, since the products are commonly valued by quantifying them while several effects are of a qualitative nature (Centre of Excellence for Evaluation, 2012).

CONCLUSIONS

The Theory of Change is a useful tool to assess the effects and the impact of the Program; there is a greater participation of local actors in the process of data obtention, and a relationship between the main technological changes with the Program with the use/implementation of new technologies.

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