Resilience and Livelihoods; A community development model

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ABSTRACT

Objective: Formulate a community development model to contribute to rural resilience at the states of Campeche, Chiapas, Tabasco, Yucatán and Quintana Roo, Mexico.

Design/methodology/approach: The project execution considered the incursion in high and very high marginalization communities with populations between 300 and 3,800 inhabitants, throughout five states. Sustainable livelihoods and the logical framework made it possible to systematize and analyze the collected data to characterize the potential territorial development, carried out with a secondary sources review and a field phase. A social innovation agenda was formulated with descriptive files of projects and potential financing sources.

Results: 93 localities established in 14 micro-regions in five states were intervened. Ninety extension workers were trained in community development, 216 training actions took place, 90 community databases compiled, 90 community development plans, 90 integration acts of community consultation and planning bodies (CCPB) and 14 acts of integration of extension groups for the microregional development (EGMD).

Limitations of the study/implications: The duration of the project prevented the implementation of community development plans.

Findings/conclusions: The present model consider the individuals participation as the basis for the life quality improvement of the community, based on territorial appreciation and the collective identity framed in participatory processes.

Keywords: Quality of life, sustainable livelihoods, social network analysis.
INTRODUCTION

In Mexico, 73.03% (3,888,764) of the country’s rural economic units relate to family farming schemes (subsistence) with no market linkage (SAGARPA-FAO, 2014); however, the public policy promoted in the sector shows a hegemonic character with the purpose of promoting agricultural exports specialization (Reynolds et al., 1993; Appendini, 1995). Unfortunately, the strategy has contributed to the polarization of production systems in the Mexican countryside; including, on the one hand, the agro-export sector, producers in transition, and, on the other, the producers who are the target population of assistance programs to combat poverty. Usually the latter linked to smallholder production schemes (52.81 million Mexicans; approximately 44.60% of the population during the 2008-2018 period) concentrated in the South-Southeast Region, particularly in Veracruz (4.54 million), Chiapas (3.93 million), Oaxaca (2.60 million), Guerrero (2.36 million) among others (CONEVAL, 2019). Paradoxically, the South-Southeast Region has more than 70% of the biodiversity of North America and is part of the Mesoamerican Biological Corridor, so it is convenient to question the logic followed in development policies from above (top down), which propose schemes hegemonic valid for all the territories of Mexico (SEDATU, 2013; Rózga, 2013). This document is framed as a development proposal from below (bottom up), where the micro-social space or community makes it possible to focus attention on the internal interactions between actors and their arrangements as a basis to cement development strategies or sustainable livelihoods (SL) as an alternative to the hegemonic agricultural policy implemented in the sector (Rózga, 2013; Méndez, 2015). The SL are based on the development potential of the territory, and involve natural, productive resources, anthropogenic activity related to the use, conservation and exploitation of resources, therefore, it is the basis for the generation of income and satisfaction of the needs of the rural population (Vázquez-Barquero, 2007).

The capitals that make up the SL are human, which represents all those elements linked to the rural population such as health status, population growth, migration, and social capital. This involves the relationships or links established by the inhabitants, natural capital, which relates the natural resources of the territory (land, flora, fauna, bodies of water, etc.), the physical capital, which considers the basic infrastructure and those production goods used by the populations to satisfy their basic needs and carry out their productive activity, and the financial capital, which considers access to markets, the construction of rural and complementary income, but also the availability of money or equivalent (Alobo, 2015). It is worth mentioning that the conversion of assets to capital through the production of goods and services is of vital importance, with a view to contributing to the improvement of the quality of life of the rural population within the framework of community development. The above as a process of social construction that pursues the development and strengthening of rural resilience based on the development potential of the territory (natural resources, productive resources and anthropic activity) from the perspective of the community (Carlson et al., 2017; Pastor, 2015; Zarazúa and Gómez-Carreto, 2014). Rural resilience, therefore, is the ability of a rural territory to positively adapt its economic, social, natural structure, etc., based on the identified livelihoods, and to maintain continued development over time in the face of adverse situations that generate serious impacts (Sánchez-Zamora et al., 2016; Méndez, 2016). Therefore, a community development model was formulated to contribute to rural resilience in the states of Campeche, Chiapas, Tabasco, Yucatán and Quintana Roo, Mexico.

MATERIALS AND METHODS

The execution of the project considered the incursion into communities of high and very high marginalization with a population of between 300 and 3,800 inhabitants, established in five states, between July 2017 and March 2018, under the auspices of the Instituto Nacional para el Desarrollo de Capacidades del Sector Rural, A.C. (INCA Rural, A.C.) within the framework of the Extension Center for Community Development (PM171032) project for Campeche, Chiapas, Tabasco, Yucatán and Quintana Roo.

The methodological tools used were sustainable livelihoods and the logical framework, which allowed the systematization and analysis of data collected in the characterization of the development potential of the territory (natural resources, productive resources and anthropogenic activity), carried out with a review of secondary sources and phase field. Subsequently, a community development plan was formulated with descriptive sheets of projects and potential sources of financing.

The methodological proposal proposes the participation of the individual as a basis to contribute to the improvement of the quality of life of the community, for which
the integration of the consultation and community planning bodies (CCPB) and of the extension groups for micro-regional development (EGMD) are vital. For the purposes of this model, the CCPB was contextualized as a space for permanent participation of community actors that allows the development and consolidation of the processes of empowerment and construction of Roadmap Agendas of intervention strategy. The integration of the CCPB considered the identification of key actors with the applicability of social network analysis, dissemination of the call for the integration of the CCPB, the planning of the participatory assembly, the signing of the act of installation and compilation of the personal file of the members of the CCPB and finally, the protest of the members of the CCPB. Meanwhile, the EGMD as multi-community bodies will seek to develop and strengthen the capacities of the members of the CCPB, in such a way that these bodies analyze, prioritize, promote and promote community development plans that contain the strategies identified from the means of life and community optics (Alamilla et al., 2018).

RESULTS AND DISCUSSION

In this study 93 localities, established in 14 microregions, in five states were intervened. Ninety extension workers were trained in community development, 216 training actions carried out, 90 community databases, 90 community development plans, 90 acts of integration of CCPB, and 14 acts of integration of EGMD (Figure 1 and Table 1).

In total, 26 follow-up or training events were held, among them: workshops to introduce methodologies and tools of the community intervention strategy to state trainers, follow-up meetings and presentation of extension workers, among others (Figure 2).

One of the neuralgic points that the project faced was the identification of the target population, so we proceeded to integrate the unique databases of beneficiaries or BDU (Annex II of the SAGARPA operating rules, 2017), with documentary supports that guarantee the authenticity and veracity of the information. The extension model evaluated in this work showed that the relationship with an educational and research institution provides important contributions to the model since that is where novel information is found. However, not having control over the hiring of extension agents, it hinders the formation of interdisciplinary groups for technology transfer, to form; for example, groups of extension agents with agronomic, livestock, social, administrative and technological profiles, in such a way that the production systems improve, working with the beneficiaries that facilitates the generation of new local entrepreneurs and can migrate to economically higher social strata. In this regard, Cadena-Iñiguez et al. (2018) pointed out that the incorporation of ICTs in agricultural production systems is an innovation that needs to be adopted by producers and break the paradigms that technologies are not applicable to the field and are very expensive. Like Landini (2014), the highest percentage of extension workers were men (62%), with university studies (100%) and 5% with postgraduate studies. The average age was 30 years. Although the extension agents were trained in the community development extension model, Landini (2014) recommends training them in service and management of social processes, especially group management, participatory process management, ability to teach and empathize, etc. in order to improve the extension processes. The foregoing agrees with the model presented in this work. Finally, this model has methodological tools that lead communities to value themselves for what they are and have and to identify their productive potential with a focus on equity and gender (Figure 3).
Table 1. List of intervened localities in selected states, ordered based on the microregion to which they belong (Alamilla et al., 2018).

| State                | Municipality         | Micro-area   | Locality                        | Habitants |
|----------------------|----------------------|--------------|---------------------------------|-----------|
| CAMPECHE             | CALKINI              | Camino Real  | Concepción                      | 351       |
|                      |                      |              | San Agustín Chunhuás             | 401       |
|                      |                      |              | Pucnachén                        | 865       |
|                      |                      |              | San Antonio Sahcabché            | 1858      |
|                      |                      |              | San Nicolás                      | 369       |
|                      |                      |              | Santa Cruz Ex-Hacienda           | 1255      |
|                      |                      |              | Santa Cruz Pueblo                | 1908      |
|                      |                      |              | Tepakán                          | 1895      |
|                      |                      |              | Santa María                      | 236       |
|                      |                      |              | Pocboc                           | 1624      |
|                      |                      |              | Santa Cruz                      | 1118      |
|                      |                      |              | Dzitnup                          | 891       |
| HECELCHAKÁN          |                      |              | Nohalal                          | 880       |
|                      |                      |              | Pich                             | 1756      |
|                      |                      |              | Tixmucuy                         | 497       |
|                      |                      |              | San Luciano                      | 319       |
|                      |                      |              | Adolfo Ruiz Cortínez            | 378       |
|                      |                      |              | Hool                             | 1181      |
|                      |                      |              | Santo Domingo Kesté              | 3763      |
| CHAMPOTÓN            |                      |              | Nohalal                          | 522       |
|                      |                      |              | Chunyaxnic                       | 364       |
| CAMPECHE             | CAMPECHE CENTER      |              | Agua Fría                        | 571       |
|                      |                      |              | Emiliano Zapata (San Joaquin)    | 377       |
|                      |                      |              | Lorna Bonita                     | 1071      |
|                      |                      |              | La Tuza (Maceo)                  | 437       |
|                      |                      |              | Ignacio Zaragoza                 | 963       |
|                      |                      |              | Santa Cruz 2da. Sección de Loma Bonita | 390   |
|                      |                      |              | Cuauhtémoc                       | 728       |
|                      |                      |              | Punta Arena                      | 1365      |
|                      |                      |              | El Rosario                       | 666       |
| CHIAPAS              | CATAJÁ               | CATAJÁ       | Belisario Dominguez Norte        | 379       |
|                      |                      |              | San Antonio                      | 428       |
|                      |                      |              | América Libre                    | 1263      |
|                      |                      |              | Estrella de Belén                | 396       |
|                      |                      |              | Nuevo Mundo                      | 353       |
| PALENQUE             | PALENQUE ALTOS       |              | Noh-Bec                          | 2045      |
|                      |                      |              | Uh May                           | 480       |
|                      |                      |              | X-Hazíl Sur                      | 1422      |
|                      |                      |              | Andrés Quintana Roo              | 346       |
|                      |                      |              | Reforma Agraria                  | 314       |
| SALTO DE AGUA        |                      |              | Altos de Sevilla                 | 605       |
|                      |                      |              | San Pedro Peralta                | 766       |
|                      |                      |              | Lázaro Cárdenas Segundo          | 699       |
|                      |                      |              | San Román                        | 530       |
|                      |                      |              | Morocoy                          | 1293      |
|                      |                      |              | La Libertad                      | 421       |
| QUINTANA ROO         | FELIPE CARRILLO PUERTO |              | Cristóbal Colón                  | 341       |
|                      |                      |              | San Cosme                        | 361       |
|                      |                      |              | San Francisco                    | 767       |
|                      |                      |              | San Juan de Dios                 | 360       |
|                      |                      |              | Ignacio Zaragoza                 | 2213      |
| QUINTANA ROO         | OTHON P. BLANCO      | OTHON P. BLANCO | Altos de Sevilla                 | 605       |
|                      |                      |              | San Pedro Peralta                | 766       |
|                      |                      |              | Lázaro Cárdenas Segundo          | 699       |
|                      |                      |              | San Román                        | 530       |
|                      |                      |              | Morocoy                          | 1293      |
|                      |                      |              | La Libertad                      | 421       |
| QUINTANA ROO         | LÁZARO CÁRDENAS      | LÁZARO CÁRDENAS | Cristóbal Colón                  | 341       |
|                      |                      |              | San Cosme                        | 361       |
|                      |                      |              | San Francisco                    | 767       |
|                      |                      |              | San Juan de Dios                 | 360       |
|                      |                      |              | Ignacio Zaragoza                 | 2213      |
| State | Municipality   | Micro-area | Locality                                           | Habitants |
|-------|---------------|------------|----------------------------------------------------|-----------|
| YUCATÁN | HALACHÓ | HALACHÓ | Cuch Holoch                                       | 2017      |
|       |              |           | Kancabchén                                        | 460       |
|       |              |           | Santa María Acu                                    | 1437      |
|       | MAXCANU      | HALACHÓ   | Granada (Chichan Granada)                         | 476       |
|       |              |           | San Rafael                                         | 1252      |
|       |              |           | Chunchucmil                                       | 1091      |
|       | MANI         |           | Paraíso                                            | 656       |
|       | OXKUTZCAB    |           | Santa Rosa (Santa Rosa de Lima)                    | 913       |
|       | TEKAX        | PUUC      | Coahuila (Santa Teresa Coahuila)                   | 626       |
|       |              |           | Tipikal                                            | 951       |
|       |              |           | Emiliano Zapata                                   | 1350      |
|       | TICUL        |           | Canek                                             | 308       |
|       |              |           | Manuel Cepeda Peraza                              | 573       |
|       | HUNUCMA      |           | Pencuyut                                          | 1524      |
|       | TETIZ        | TETÍZ     | Pustunich                                         | 2480      |
|       | UMAN         |           | Yotholín                                          | 2267      |
|       |              |           | Hunkanab                                          | 466       |
|       |              |           | Tetiz                                             | 3939      |
|       |              |           | Nohuayún                                          | 777       |
|       |              |           | Dzibikak                                          | 1388      |
|       |              |           | Oxcum                                             | 1175      |
| TABASCO | TEAPA      | TEAPA     | Ignacio López Rayón 1Ra. Sección                   | 552       |
|       |              |           | José María Morelos y Pavón 1ra. Sección            | 422       |
|       |              |           | Mariano Pedrero 1Ra. Sección (La Providencia)      | 381       |
|       |              |           | José María Morelos y Pavón (Las Delicias)         | 815       |
|       |              |           | José María Morelos y Pavón (Santa Rita)           | 489       |
|       |              |           | Las Lilias                                        | 365       |
|       | BALANCÁN     | BALANCÁN NORTE | El Pipila                                        | 512       |
|       |              |           | Constitución                                       | 523       |
|       |              |           | Miguel Hidalgo y Costilla                          | 292       |
|       | EMILIANO ZAPATA |         | Ingeniero Mario Calcáneo Sánchez                  | 319       |
|       |              |           | Emiliano Zapata (Sección Jobal)                    | 344       |
|       |              |           | Nuevo Chablé                                      | 407       |
|       | BALANCÁN     | TENOSIQUE | Mactún                                             | 1055      |
|       |              |           | Jolochero                                         | 737       |
|       |              |           | Arroyo el Triunfo 2Da. Sección                    | 342       |
|       | TENOSIQUE    |           | Canitzán                                          | 308       |
|       |              |           | Emiliano Zapata 2Da. Sección (El Carmen)          | 443       |
|       |              |           | Ignacio Zaragoza                                   | 357       |
|       |              |           | San Isidro Guasívan                               | 361       |
|       |              |           | Los Rieles de San José                            | 336       |
|       |              |           | Crisóforo Chiñas                                   | 353       |

**CONCLUSIONS**

The innovation in this model is to use a series of analysis tools to carry out a diagnosis focused on the capital available to producers and to focus their requirements from their perspective and not from a vertical vision of the extensionist or government program. It proposes to generate groups of extension agents from different disciplines that allow meeting the needs of rural actors, leading producers to be agricultural microentrepreneurs, and leading them towards a vision of wealth from different points of view.
Figure 2. Fotografía de la evidencia del modelo de extensión. A) Equipo de trabajo interdisciplinario y capacitación para coordinadores regionales. B) Capacitación para agentes de extensión. C) Aprobación de agendas de innovación. D) Protestas de la Comisión Consultiva y Planificadora (CCCPB). E) Grupos de extensión para desarrollo microregional (EGMD).

Figure 3. Modelo de Desarrollo Comunitario (Alamilla et al., 2018).
REFERENCES

Alamilla, J., Zarazúa, J., Caamal, J., Vales, J., Rocha, J., & Aceves, E. (2018). Informe final. Centro de extensionismo para el desarrollo comunitario. Proyecto PM171032 (pp. 23-32). Champlitón: Colegio de Postgraduados.

Alobo Loison, S. (2015). Rural Livelihood Diversification in Sub-Saharan Africa: A Literature Review. The Journal Of Development Studies, 51(9), 1125-1138. doi: 10.1080/00220388.2015.1046445

Appendini, K. (1995). La transformación de la vida económica del campo mexicano. En: J-F. Prud’homme (Coord.) Impacto social de las políticas de ajuste en el campo mexicano (pp. 31-104). México D.F.: Instituto Latinoamericano de Estudios Trasnacionales, Jean-Francois Prud’homme y Plaza y Valdés S.A. de C.V.

Cadena Iñiguez, P., Carnas Gomez, R., Rodríguez Hernández, F., Berdugo Rejón, J. G., Ayala Sánchez, A., Zambada Martínez, A., . . . López Báez, W. (Junio de 2015). Contribuciones del INIFAP al extensionismo en México y gestión de la innovación. Revista Mexicana de Ciencias Agrícolas, 6(4), 883-895. Obtenido de http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-09342015000400017

Cadena-Iñiguez, P., Rendón-Mendel, R., Rodríguez-Vázquez, H., Camacho-Villa, C., Santellano-Estrada, E., Guevara-Hernández, F., & Govaerts, B. (2018). Propuesta metodológica-interinstitucional para un nuevo Extensionismo en México. Revista Mexicana de Ciencias Agrícolas, 9(8), 1777-1785. Recuperado el 09 de 04 de 2020, de https://repository.cimmyt.org/bitstream/handle/10883/19899/59950.pdf?sequence=1

Carlson, J., Johnston, M., & Dawson, J. (2017). Territorial economic development strategies in Nunavut: a hindrance or a help to community economic development? The Journal Of Rural And Community Development, 12(2/3), 236-255.

CONEVAL. (Consejo Nacional de Evaluación de la Política de Desarrollo Social). (2019). Medición de la pobreza. Recuperado de https://www.coneval.org.mx/Paginas/principal.aspx. Fecha de consulta: 15-10-2017.

Landini, F. (2014). La problemática de extensión y desarrollo rural en México desde la perspectiva de los extensionistas rurales, Reflexiones desde la psicología. Informe de proyecto, Universidad de Buenos Aires, Facultad de Psicología. Recuperado el 15 de 04 de 2020, de https://www.colpos.mx/wb_pdf/Veracruz/Agroecosistemas/lectura/14.pdf

Méndez, R. (2016). Del desarrollo local a la resiliencia territorial: Claves locales para la reactivación. Madrid: Centro de Ciencias Humanas y Sociales - Consejo Superior de Investigaciones Científicas, 21 p. Recuperado de https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-09342015000400017

Rózga, L. R. (2003). Sistemas regionales de innovación: Antecedentes, origen y perspectivas. Convergencia, 10(33), 225-248.

SAGARPA (Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación) y FAO (Organización de las Naciones Unidas para la Alimentación y la Agricultura). (2014). Diagnóstico del sector rural y pesquero de México 2012 (pp. 17-37). Ciudad de México: SAGARPA y FAO.

Zarazúa, J., & Gómez-Carreto, T. (2014). Experiencias de aprendizaje tecnológico en la Región Centro-Occidente de México. In R. Molina, R. Contreras & A. López, Emprendimiento y MIPYMES. Nuevo balance y perspectivas (1st ed., pp. 138-151). México, D.F.: Pearson Educación de México.