



Servant Leadership: A Critical Component in the Conservation of Natural Resources – An Intercultural Approach

Francisco J. Rosado-May, Valeria B. Cuevas-Albarrán, Olivia Hernández-González, and Nelsy F. Jiménez Pat

Contents

Introduction	2
Bridging Cultures, Bridging Leadership	3
Case Study	4
Noh Bec	6
Leadership in Noh Bec: A Critical Component of Their Success	7
Which Leadership Model Is at Work in Noh Bec?	8
Final Considerations	15
Cross-References	17
References	17

Abstract

Under the assumption that leadership plays a critical role in explaining the conservation of natural resources and acknowledging that, in Indigenous territories, around 80% of the world’s natural resources are safeguarded, this chapter describes a case study in a Yucatec Maya community where the following question was addressed: what model of leadership is related to the success in the conservation of forest in Noh Bec, Quintana Roo, Mexico? For over 80 years, the leadership in this community worked with non-Indigenous representatives of governmental and nongovernmental organizations in successful programs related to the sustainability of their forest. The forest in Noh Bec is only part of a much larger area known as the Selva Maya, which includes the Yucatan Peninsula, Tabasco, and Chiapas, in Mexico, Belize, and Guatemala; Selva Maya is considered today the largest tropical forest in good conservation status in Mesoamerica.

F. J. Rosado-May (✉) · V. B. Cuevas-Albarrán · O. Hernández-González · N. F. Jiménez Pat
 Territory and Biocultural Development, Universidad Intercultural Maya de Quintana Roo, Jose Maria Morelos, Quintana Roo, Mexico
 e-mail: francisco.rosadomay@uimqroo.edu.mx; valeria.cuevas@uimqroo.edu.mx;
olivia.hernandez@uimqroo.edu.mx; nelsy.jimenez@uimqroo.edu.mx

The case study suggests, as a first approximation, that the interaction of the stakeholders, each from different culture, has been and still is a successful intercultural process in which the leadership model related to the success in the sustainable management of the forest in Noh Bec is servant leadership.

Keywords

Noh Bec · Sustainable tropical forest management · Servant leadership · Selva Maya

Introduction

In 2021, two important meetings were held to address critical global issues. One was the UN Food Systems Forum; the other was COP 26. Both events had in common not only the concern over issues such as hunger, climate change, and loss of biocultural diversity but also discussed how to reduce their negative impacts as well as strategies on how to achieve the Sustainable Development Goals (SDG) by 2030 set by the UN. Although effective governance was a recurrent topic because it is considered a critical element for achieving the SDG (Boas et al., 2016; Glass & Newing, 2019), the connection made to leadership was not strong enough.

Governance, however, is closely related to leadership, especially in relation to environmental issues (Adams et al., 2011; McCann & Holt, 2010). This relationship has led to connecting sustainability with leadership, which in turn provides conditions to explore mechanisms that explain the successful conservation of natural resources in Indigenous territories where around 80% of the world's biodiversity is safeguarded (Barragán Alvarado, 2008; The World Bank, 2018).

There is a growing body of literature that explores which type of leadership is more suitable to achieve sustainability with efficient governance. In addressing intercultural leadership in Indigenous communities, Rosado-May et al. (2020a) describe how it works in Yucatec Maya communities emphasizing the role of knowledge, wisdom, communication, and positive interpersonal interactions. Exploring leadership in a Blackfeet community, Gladstone and Pepion (2017) describe how it is grounded in tribal spirituality and discuss the transformation of society toward an equitable and sustainable future. In exploring the role of leadership in the transformations needed in our societies, Gram-Hanssen (2021) sets the question: what kind of leadership? Using examples from an Alaska Native community, Gram-Hanssen (2021) states that “leadership in the community can be seen as something simultaneously individual and collective and argue that an Indigenous relational ontology makes it possible to imagine leadership as an individual-collective simultaneity” and highlights “the connections to theories and approaches within mainstream leadership research, pointing to the potential for bridging disciplines and paradigms.”

In a review of current approaches to leadership for sustainability, Fry and Egel (2021) conclude that there is a need for new leadership models and offer a model for

Global Leadership for Sustainability (GLS) that incorporates spirituality through the qualities of self-transcendence and interconnectedness; the authors expect leaders moving beyond satisfying stakeholders' demands for economic returns and consider transactional/transformational, ethical, authentic, and servant as traditional leadership approaches. Fry and Egel (2021), however, do not provide empirical evidence or case study of the efficacy of their GLS model.

There is a small but growing literature on servant leadership and sustainable development practices in different settings. Aboramadan et al. (2021) examine the effects of environmentally specific servant leadership on green work outcomes among hotel employees to promote green creativity. Tuan (2020) demonstrated the importance of servant leadership and green creativity among tourism employees. Following the same trend of thinking, Luu (2020) analyzed the role of servant leadership in integrating green strategy and green human resource practices to trigger individual and organizational green performance. According to Tuan (2021), environmentally specific servant leadership plays a critical role on green performance via green climate and green crafting. According to Siddiquei et al. (2021), environmentally specific servant leadership plays a strategic role to accomplish environmental performance, as demonstrated in China. Under some conditions, green servant leadership, however, works efficiently when interacting with two important factors, self-efficacy and intrinsic motivation, in order to predict employees' pro-environmental behavior (Faraz et al., 2021).

Studies of leadership under Indigenous context help to understand internal processes (e.g., Voyageur et al., 2015; Hardison-Stevens, 2014; De Padua and Rabbitskin, 1951); at the same time, research on leadership in general keeps presenting new approaches (e.g., Lee et al., 2020; Iordanoglou, 2018; Jago, 1982). According to Beer (2014), these two bodies of research on leadership, Indigenous and non-Indigenous, have been developed in isolation from each other. Based on the argument that there is a strong interaction between governance and leadership, Beer (2014) identifies that local leadership sometimes takes an oppositional role to government and in other instances serves as mediators across spatial scales. In addressing the question, how can we create the best learning environments for Indigenous students through good leadership at all levels?, Hardison-Stevens (2014) concludes that Indigenous people need the academic systems as much as the academic system needs Indigenous people; a bridge between cultures is critical for multicultural societies.

Bridging Cultures, Bridging Leadership

The successful conservation of natural resources in Yucatec Maya communities (Martínez-Reyes, 2014; Dalle et al., 2006; Bonilla-Moheno & García-Frappoli, 2012) most likely is part of the 80% of the world's biodiversity safeguarded in Indigenous territories. However, the communities are not 100% Indigenous, and they interact with non-Indigenous representatives of government and non-governmental organizations around programs related to their natural resources.

Thus, their successful work conserving their natural resources occurs in a multicultural setting. The representatives of all parties involved, Indigenous and non-Indigenous, play a leadership role; understanding the emerging processes and the mechanisms of their interactions constitutes the subject of this chapter.

The literature on Indigenous leadership provides elements that distinguish how leadership is practiced (e.g., Voyageur et al., 2015; Hardison-Stevens, 2014; De Padua & Rabbitskin, 1951), but few publications attempt to articulate Indigenous elements like spirituality, interconnectivity between humans and with nature, and respect for wisdom into a model. From the perspectives provided by Native Pacific Islanders, Polynesians, and Samoans, Peterson (2018) examines the themes that influence Samoan leadership and how they can interact with other types of leadership to reduce inequalities; the author uncovers an Indigenous model of leadership based on the notion of *alofa*, or love. On the other hand, Rosado-May et al. (2020a) discuss the concept of intercultural leadership as a result of bridging Indigenous and non-Indigenous leadership, regardless of the identification of a leadership model.

Leadership processes emerging from the interaction of Indigenous with non-Indigenous leadership were addressed by Ruwhiu and Elkin (2016) in studying the similarities of Indigenous Maori leadership with a non-Indigenous leadership model. The authors present evidence of a strong resonance between Maori leadership and the western model called servant leadership. Ruwhiu and Elkin (2016) suggest that these two leadership domains offer transformative realization of leadership development that accepts alternative ontologies, epistemologies, and worldviews, providing for richer and more meaningful understanding of leadership for the twenty-first century.

On the other hand, literature on non-Indigenous leadership is much more abundant, providing not only elements on how leadership is practiced but articulating elements around models. For instance, Knies et al. (2016) articulate leadership with performance; in an influential paper, Avolio et al. (2009) reviewed theoretical and empirical developments in leadership examining the work that had been done on substitutes for leadership, servant leadership, spirituality and leadership, cross-cultural leadership, and e-leadership, concluding that leadership is evolving to a more holistic view of leadership, which is a complex and emergent dynamic in organizations, and encourage attention to how leadership is exercised in different cultures. Acknowledging that leadership is the single most used word in management theory, in a practical way, Caredda (2021) graphically lists over 120 models representing the complexity of the topic.

Case Study

Among the strategies to mitigate climate change, preserve biocultural diversity, or ensure good livelihood conditions to local inhabitants, the conservation of natural resources is critical. In the Americas, there are two significant large forest areas considered under good conservation status, the Amazon in Brazil and the Selva Maya located in southern Mexico, Belize, and Guatemala, coinciding with the

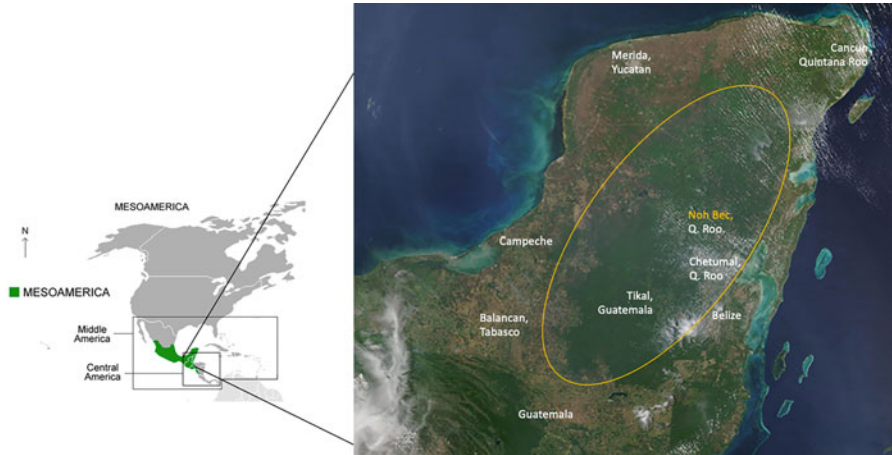


Fig. 1 Location of Selva Maya, encircled, and Noh Bec. The satellite image was taken from https://modis.gsfc.nasa.gov/gallery/individual.php?db_date=2021-05-05; the Mesoamerica map was taken from https://commons.wikimedia.org/wiki/File:Mesoamerica_geo_location.png

territory where the Maya culture developed. In both Amazon and Selva Maya, the role of Indigenous peoples in relation to the high status of conservation has been documented (Walker et al., 2014; Garnett et al., 2018; Sobrevila, 2008; Ellis et al., 2020, Aguirre Cortés et al., 2020).

The conservation of natural resources in Indigenous territories is not necessarily the result of a smooth process; several types of pressures need to be considered. For instance, land tenure and the expansion of agricultural frontiers are affecting the Amazon (Holland et al., 2014); poor processes of conflict resolution due to misunderstandings (Redpath et al., 2013) are becoming more visible in explaining poor conservation of natural resources; according to Martínez et al. (2021), the Selva Maya faces poor environmental planning which is rapidly leading to loss of mammal's diversity and populations due to habitat fragmentation, farming, and insufficient water sources. Thus, understanding the mechanisms that explain the successful conservation of natural resources in some communities is critical, especially leadership (Adams et al., 2011; McCann & Holt, 2010).

In Mexico, the distribution of Selva Maya includes the states of Chiapas, Tabasco, and all of the Yucatan Peninsula, Campeche, Yucatan, and Quintana Roo (Fig. 1). The land tenure for most of the local communities located within the Selva Maya is called “ejido.” The basic idea of an ejido, which was the result of a land reform in Mexico back in 1917, was that each member of an ejido, called “ejidatario,” can work or live on a piece of land, but no private property title could be issued; all ejido was communal land. However, in 1992, another land reform left in the hands of ejidatarios the possibility of privatizing the piece of land that they work on or lived on (Romero Navarrete, 2015; Schumacher et al., 2019). Until now, many ejidos kept the communal land tenure in place, rejecting privatization.

According to the Mexican Agrarian Legislation (Ley Agraria, 2018), the governance and organization of the ejidos are as follows. Each ejido elects every 3 years a group of representatives called “comisariado ejidal”: one acts as president of the comisariado, another holds the position of secretariat, and a third one manages the finances. Each of them has a substitute. Another body for governance, besides the comisariado and elected at the same time, is called “consejo de vigilancia” which oversees the decisions and work of the comisariado, making sure it follows the normativity. Like the comisariado, the consejo de vigilancia is integrated by a president, secretariat, and treasury, each with a substitute. Both the comisariado and the consejo de vigilancia serve a 3 years’ term and cannot be reelected immediately after ending their tenure. Each ejido holds a general meeting every month, and the assembly elects first a person who will facilitate/moderate the meeting, somebody in charge of taking notes to prepare the minute, and people responsible for counting the voting. At the assembly, both the comisariado ejidal and the consejo de vigilancia basically participate as any other ejidatario in the meeting.

Because many of the issues discussed in the meetings are sensitive, mostly related to land use, whoever holds the presidency of the comisariado or the consejo de vigilancia or the facilitator of a meeting, men or women, has to have a very good leadership and communication skills.

In most communities within the Selva Maya in Mexico, there is a person who represents the local government. In Quintana Roo, he/she is called “Delegado, Subdelegado or Alcalde Municipal,” depending on the population size of a community. Because the population of a community is not 100% ejidatarios, the delegado municipal could or could not be ejidatario; he/she represents the local government and represents his/her community before the local government, and he/she makes sure that public policies from the local government are implemented in his/her community. He/she is designated by the municipal authority or elected under a different process than the comisariado ejidal. Thus, in each community, there are two strong leaderships: the delegado/a municipal and the comisario/an ejidal. It is very rare that the two positions are held by the same person.

Noh Bec

The community chosen for this case study, Noh Bec, in Maya means “big roble” referring to a tree, *Tabebuia rosea* (Bertol.) A. DC., in the Bignoniaceae family. Noh Bec was founded in 1936 by immigrants from the state of Veracruz, Mexico (CONABIO, 2008), but soon it became a community with a multicultural population from different Mexican states; around 30% of them is of Yucatec Maya origin. According to local accounts, most of the firstcomers consider themselves of Indigenous origin. For details on 2020 population statistics, see <https://mexico.pueblosamerica.com/i/noh-bec/#foto-satelital>. Noh Bec is part of the municipality of Felipe Carrillo Puerto, in the state of Quintana Roo, Mexico (Fig. 1).

According to Abraham González Sosa, former president of the comisariado ejidal (2018–2021), Noh Bec is an ejido with 216 ejidatarios occupying a total of 24,122

has: 111.6 has per capita. In 1983, via ejido assembly, the community decided to allocate 18,000 has for management and 716 has for protection. CONABIO (2008) reports that from 1936 to 1956, Noh Bec forest was exploited by contractors; from 1957 to 1983, the federal government granted the ejido permission to exploit their forest; from 1984 to 1998, Noh Bec became one of the ejidos joining a program called Plan Piloto Forestal (Forestry Pilot Plan) supported by a Mexico-Germany Agreement signed in 1982 and the Mexican federal and the state government; the idea was to design a sustainable management of the forest with the community (Keyes Hennin, 1998); from 1999 until the Hurricane Dean in 2007, the community decided to take control in the management of their resources without losing the support of the Mexican governmental agencies and international organizations. Dean destroyed the forest in Noh Bec and in many other ejidos in Quintana Roo, but the fast recovery surprised everyone but the ejidatarios; they had built a highly resilient forest (Navarro-Martínez et al., 2012; McGroddy et al., 2013).

In 1995, still working with the Plan Piloto Forestal, Noh Bec was the first ejido in Quintana Roo, Mexico, to obtain an international certification for good/sustainable practices in forest management; in 2011, the Mexican Secretariat of the Environment (SEMARNAT) authorized to the ejido Noh Bec the implementation of a new model for managing their forest, aiming at participating in an international market designed for certified forest products and to achieve a certification from the Forest Stewardship Council (FSC), based in Bonn (<https://fsc.org/en>); in 2015, Noh Bec did get the international FSC certification RA-FM/COC-000066 (Madrid Zubirán, 2015); in 2012, Noh Bec received from the Mexican National Council on Forestry (CONAFOR) a recognition as an “ejido-school” offering training on sustainable tropical forest management to community foresters; in 2015, Noh Bec received the National Forestry Award for their contributions to community forest sustainable management (González Sosa, 2018–2021).

Noh Bec is an exemplary community in sustainable management of their forest, thus contributing significantly to the conservation of the Selva Maya. This achievement could not have happened without efficient governance and leadership. The stakeholders involved, ejidatarios, comisariado ejidal, local and federal government representatives, and international organizations, have different cultural background, including Indigenous and non-Indigenous; how was the process of multiple cultural leadership? What were the elements of leadership from each stakeholder? Obviously, the diverse stakeholders were able to reach solid agreements in an efficient manner and for a long period of time; how did they articulate their leadership skills? Is there a leadership model that includes features, broad and flexible enough, that different cultures can relate to?

Leadership in Noh Bec: A Critical Component of Their Success

Knowing that several stakeholders participated in the process for successful conservation of their forest, the first step was to investigate the names of participants and the years where they played a significant role in the decision-making processes. The

list included contractors, members of the Mexico-Germany Agreement, presidents of the comisariado ejidal, subdelegados, and state and federal government representatives, and when the Plan Piloto Forestal was implemented, there was a community member who participated in the discussions.

The second step included an open interview with those on the list who were available and to hold meetings with groups of community members, both ejidatarios and non-ejidatarios. The goal of the interview with representatives was to determine whether or not they considered themselves playing a leadership role. Based on the interviews and meetings, key expressions were identified and related them to elements of leadership models that have been suggested in the literature regarding sustainable management of natural resources.

The first step, a list of stakeholders, was determined via publications. Galleti (1999) and Janka (1981), considered part of the Mexico-Germany Agreement, non-community members, provided information relevant to detect leadership elements from nongovernmental stakeholders. The publication of Ellis et al. (2015), researchers who have been working for years in Noh Bec, provides elements that can help detect leadership and their perception of the process as outsiders. An important source for identifying local and governmental stakeholders is a book by Tadeo Ferral (2020), a farmer, chiclero, and forester, whose family was among the first ones to settle in Noh Bec. Based on Tadeo Ferral's list, a group of former presidents of comisariado ejidal living in Noh Bec and available were chosen to interview.

Table 1 shows key expressions from each stakeholder segment. However, since the implementation in 1983 of the Plan Piloto Forestal (Forestry Pilot Plan), which was a turning point for Noh Bec, each stakeholder segment basically kept the expressions listed. The expressions from the comisariado, delegado, and municipal president are from those who occupied those positions in the year in parenthesis, whereas the expressions from ejidatarios (community members) and government representatives were obtained from interviews; the wording reflects the thinking of ten interviews in each of those segments and group meetings. The expressions from the Mexico-Germany Agreement segment were taken from publications, as mentioned above.

Which Leadership Model Is at Work in Noh Bec?

Based on the literature reviewed, the following components have to be considered in addressing the question which leadership model is at work in Noh Bec. One is that the stakeholders represent not only a segment of interest but also different cultures, which can be differentiated as Indigenous (comisariado ejidal, ejidatarios, and municipal authorities) and non-Indigenous (Mexico-Germany Agreement representatives, state and federal government representatives). Indeed, not all community members and their representatives are Indigenous, but the thinking expressed in Table 1 shows Maya influence. The context in which leadership actions in Noh Bec, regarding the sustainability of their forest, is multicultural; on the one hand, within

Table 1 Expressions representing the thinking and guiding elements for negotiations and decision-making for each of the six segments of stakeholders in relation to the conservation of the tropical forest in Noh Bec, Quintana Roo, Mexico

Stakeholder segment	Key expressions
Mexico-Germany Agreement, Forest Pilot Plan	<p>“Forest must have an economical appeal to the inhabitants”</p> <p>“Local inhabitants are the most interested parties for conservation of their forest; thus, consensus building is a critical factor for the success of conservation. Decision making must be horizontal, transparent, giving voice to all parties”</p> <p>“Forest conservation is critical for sustainability”</p>
Comisariado ejidal	<p>“This land is home; we are determined to preserve it for the future of our people” (2018–2021)</p> <p>“We have our differences, but the forest unites us. I know that I have to lead and do it right by listening and doing my best to meet the expectations of the ejidatarios” (1961–1964)</p> <p>“We care for our people and nature, the comisariado serves both” (2021–)</p>
Ejidatarios	<p>“We trust our comisariado to follow our thinking, he serves us. If any comisariado does not listen and helps us, we remove them”</p> <p>“To us the forest is our life, we take care of it, and it takes care of us, we have learned that generation after generation”</p> <p>“We are open to government and to NGO’s ideas and proposals, we talk to them through our leaders and find common interests; then we work together. If we think something is not right for us, we let them know; until now we have figure out how to work out differences and reach agreements”</p> <p>“We like the ejidatarios assembly, we discuss and make decisions collectively, we do not hide intentions or lie; if someone does, especially the comisariado, we take control measures”</p>
Delegado (municipal government representative)	<p>“My role is to help the community by either implementing government programs or taking community issues to the municipality for solutions” (1981–1984)</p> <p>“I listen carefully to everybody in the community, I do my best to serve them, and to do my job bridging policies from the local government to the local needs” (1993–1996)</p> <p>“I know that my community Noh Bec is important national and internationally, I do my best to keep it that way” (2021–)</p>
Municipal president	<p>“Noh Bec is a thriving community; they deserve all the support from the municipality” (1975–1978; 1984–1987)</p> <p>“Noh Bec has positioned the municipality in a high level, the municipality works with them to continue that way, listening their need and providing services. This is a guiding principle to me when I seat with other stakeholders to discuss forest management” (1993–1996)</p> <p>“The municipality of Felipe Carrillo Puerto is ready to serve Noh Bec, not to take advantage of them” (2016–2018)</p>
State and federal government representatives	<p>“The government is aware of the great importance of the tropical forest and to establish conditions for the leaders and the local communities to work with us to design sustainable</p>

(continued)

Table 1 (continued)

Stakeholder segment	Key expressions
	<p>management for the forest”</p> <p>“Is not always easy to come to agreements with the community because there are regulations by law, and because they have their ways, vision and understanding development and sustainability; however, there is usually a good attitude and flexibility from them and from us when we have to make decisions and honor them. We all know how important the forest in good condition is for everyone, so we try not to take advantage from each other but to contribute for the wellbeing of each other”</p> <p>“We have to understand that people require good living conditions, but selling their resources without planning for the future is not an option; in Noh Bec most people understand it and are open for a win-win situation”</p>

the community, not everyone is Yucatec Maya; on the other hand, the stakeholders from outside are from different cultural background.

Another component is that, with the exception of the ejidatarios segment, all of the other stakeholders play a leadership role. Each of them has constituencies to inform and/or to negotiate positions to bring into the discussions with the other stakeholders regarding the management of the forest in Noh Bec.

A third component is related to the length of time that Noh Bec has gone through and maintains the level of commitment for sustainable management of their forest. The Forestry Pilot Program implemented in the ejido in 1983 was a turning point that avoided the overexploitation of the forest and created conditions for the community to take control of their most valuable resource in a sustainable manner and has allowed Noh Bec to receive national and international rewards for their forest management. It has been almost 40 years of sustained process that included negotiations, decisions, financing, and technical support. Leadership played a critical role in articulating all those elements and the needs and livelihood of the community.

Based on the context described above, the following is a first approximation analysis of the leadership models described in previous sections of this essay, using the expressions presented in Table 1 as indicators of components of each model as well as surveys, interviews, and meetings. Knowing that there are over 120 leadership models (Caredda, 2021), the analysis focuses on models to Indigenous leadership and non-Indigenous models of leadership on sustainability provided by Fry and Egel (2021).

Indigenous leadership models. From an Indigenous point of view, not all the elements of the intercultural leadership discussed by Rosado-May et al. (2020a) are present in the expressions of all stakeholders (Table 1). Communication and positive interpersonal interactions are implicit or explicit in all stakeholders, but only the ejidatarios segment expressed connection to knowledge with the expression “To us the forest is our life, we take care of it, and it takes care of us, we have learned that generation after generation.” Gram-Hanssen (2021) argue that an Indigenous

relational ontology makes it possible to imagine leadership as an individual-collective simultaneity; this argument is present only in two expressions from the delegado municipal: “I listen carefully to everybody in the community, I do my best to serve them, and to do my job bridging policies from the local government to the local needs” and “I know that my community Noh Bec is important national and internationally, I do my best to keep it that way.” According to Voyageur et al. (2015), Hardison-Stevens (2014), and De Padua and Rabbitskin (1951), studying leadership under Indigenous context helps to understand internal processes; thus, the description of application of Indigenous model for leadership is limited to intracultural processes, not multicultural.

Transactional leadership. According to Odumeru and Ifeanyi (2013), this model focuses on the role of supervision, organization, and group performance; the leader promotes compliance of his/her followers through rewards and punishments.

Based on the expressions in Table 1, there is no indication from any stakeholder that can be related to transactional leadership model. The representatives of the Mexico-Germany Agreement clearly state “Local inhabitants are the most interested parties for conservation of their forest; thus, consensus building is a critical factor for the success of conservation. Decision making must be horizontal, transparent, giving voice to all parties.” The comisariado ejidal indicates that “We have our differences, but the forest unites us. I know that I have to lead and do it right by listening and doing my best to meet the expectations of the ejidatarios.” On the other hand, the ejidatarios, the constituency of the comisariado, clearly and strongly state: “We like the ejidatarios assembly, we discuss and make decisions collectively, we do not hide intentions or lie; if someone does, especially the comisariado, we take control measures.”

Perhaps, because transactional leadership is more concerned with processes rather than forward-thinking ideas (Odumeru and Ifeanyi (2013)), the model does not seem to fit the process of consensus building and decision-making for the sustainable management of Noh Bec’s forest.

Transformational leadership. Robbins and Coulter (2007) consider that transformational leadership is based on actions that stimulate and inspire (transform) followers to achieve extraordinary outcomes. This type of leadership enhances motivation and performance by connecting to the follower’s sense of identity and the collective identity of an organization. In analyzing literature on transformational leadership, Jensen et al. (2019) conclude that the core ambition of transformational leaders is to induce employees to transcend their own self-interest for the sake of the organization.

Applying the methodology developed by Jensen et al. (2019), to measure the operationalization of transformational leadership, the expressions presented in Table 1 provide elements to say that it is possible that this model of leadership does have some features aligned with the expressions from the stakeholders but not enough to conclude that transformational leadership explains the success on conserving the forest in Noh Bec. For example, both the concept and the methodology assume that leadership rest in one or a very few people in the organization, implying a vertical process; the expressions from all stakeholders assume that leadership is

horizontal. The expressions in Table 1, from the stakeholders, allow to consider that the following operationalizing items described by Jensen et al. (2019) for good transformational leadership are present in Noh Bec: (1) There is a concrete and clear vision for Noh Bec's future ("This land is home; we are determined to preserve it for the future of our people," an expression from the comisariado); (2) all players communicate well their vision for the future of Noh Bec ("Forest must have an economical appeal to the inhabitants," an expression from a representative of the Mexico-Germany Agreement); (3) all stakeholders contribute to a continuous effort to generate enthusiasm, especially in difficult times like the impact of Hurricane Dean ("The municipality of Felipe Carrillo Puerto is ready to serve Noh Bec, not to take advantage of them," an expression from the municipality); and (4) all stakeholders have a clear sense of where the community should be in 5 years ("To us the forest is our life, we take care of it, and it takes care of us, we have learned that generation after generation," an expression from ejidatarios). Items 5, 6, and 7, from Jensen et al. (2019) methodology, do not apply; there is no need to consider the ejidatarios employees, and there is no need to strive to get the community to work together nor to clarify for the employees how they can contribute to achieve the goals set for the forest and the community.

Although there are some features of transformational leadership in the expressions from stakeholders who lead the process of designing and implementing a sustainable management plan for the forest in Noh Bec, there is not enough evidence to say that this model fully explains the type of leadership implemented in Noh Bec.

Ethical leadership. The analysis of expressions on Table 1 in relation to ethical leadership is based on the definition of this leadership model provided by Brown, Treviño, and Harrison (2005, p.120): the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making. After an extensive literature review, Brown and Treviño (2006) conclude that ethical leaders are characterized as honest, caring, and principled individuals who make fair and balanced decisions. Ethical leaders also frequently communicate with their followers about ethics, set clear ethical standards, and use rewards and punishments to see that those standards are followed. Finally, ethical leaders practice what they preach and are proactive role models for ethical conduct.

Based on the definitions of ethical leadership and the analysis of the expressions from the stakeholders, responsible for designing and implementing a sustainable forest management in Noh Bec (Table 1), it is possible to say that indirectly ethical leadership is present in some of them. For instance, the comisariado ejidal says: "We have our differences, but the forest unites us. I know that I have to lead and do it right by listening and doing my best to meet the expectations of the ejidatarios"; the delegado representing the municipality says: "I listen carefully to everybody in the community, I do my best to serve them, and to do my job bridging policies from the local government and local needs."

There are features of ethical leadership in the expressions from stakeholders who lead the process of designing and implementing a sustainable management plan for the forest in Noh Bec; however, there is not enough evidence to say that this model

fully explains the type of leadership implemented in Noh Bec. One of the limitations of the ethical leadership model is that it seems to have been designed mostly for the leaders.

Authentic leadership. The analysis of the expressions presented in Table 1, under this model of leadership, follows the description and definition of authentic leadership presented by Walumbwa et al. (2008): authentic leadership is represented by a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development. One practical interpretation of this definition is provided by Kelley (2018) representing authentic leadership using circles that include integrity, relatableness, compassion, self-awareness, and learning mindset.

To measure authentic leadership, Walumbwa et al. (2008) consider four components: (a) leader self-awareness, (b) relational transparency, (c) internalized moral perspective, and (d) balanced processing. Datta (2015), on the other hand, uses successfully 16 variables to measure this model of leadership, designed to explore underlying factors (Hair et al., 2006): (1) says-means, (2) admits-mistakes, (3) speak-mind, (4) tell-truth, (5) beliefs-actions, (7) decisions-values, (8) positions-values, (9) ethical-decisions, (10) challenge-position, (11) analyses-data, (12) listens-viewpoints, (13) feedback-improve, (14) others-capabilities, (15) reevaluate-positions, and (16) actions-impacts.

The components from Walumbwa et al. (2008) and Datta (2015) were used to determine whether or not the authentic leadership model explains the successful process in Noh Bec for managing in a sustainable manner their forest. The components were the base for surveying 20 ejidatarios (10 men and 10 women) and discussing them in 2 informal community meetings, including ejidatarios and no ejidatarios, adult men and women, to measure the perception on the type of leadership exercised by the comisariado and the delegado (municipal government representative). The components were not presented directly but explaining first the meaning and the intent of the words. Once the meaning was understood, sometimes explained in Maya, then the words of each component were used to guide the conversation. The concepts representing the components used by Walumbwa et al. (2008) were more difficult to explain (e.g., moral, values, relational transparency). The components from Datta (2015) were more familiar to the people participating in the exercise.

Over 90% of the responses in each of the three exercises indicate a high level of trust to their leadership. The responses also allow to think that the perception of the community is that the leadership, involved in the decision-making process for designing the sustainable management of their forest, follows the pattern of the authentic leadership model. However, when the name of the model was presented, the reaction from members of the community is reflected in the following expressions: “our leaders are authentic because we voted them in” or “in Noh Bec we all are authentic leaders.”

Servant leadership. The analysis of the expressions in Table 1 related to servant leadership is based on the definition provided by Eva et al. (2019): *Servant leadership is (1) other-oriented approach to leadership; (2) manifested through one-on-one prioritizing of follower individual needs and interests; and (3) outward reorienting of their concern for self towards concern for others within the organization and the larger community.* Addressing the issue of measuring servant leadership, Grobler and Flotman (2020) investigated the evolution of methods and successfully tested the comprised version of the original 28 items developed by Van Dierendonck and Nuijten (2011). The comprised seven dimensions were proposed by Liden et al. (2008); they are (1) emotional healing, (2) creating value for the community, (3) conceptual skills, (4) empowering, (5) helping subordinates, (6) putting subordinates first, and (7) behaving ethically. To make the validation of servant leadership easier, Grobler and Flotman (2020) tested the seven dimensions using the following questions:

1. My leader can tell if something work-related is going wrong.
2. My leader makes my career development a priority.
3. I would seek help from my leader if I had a personal problem.
4. My leader emphasizes the importance of giving back to the community.
5. My leader puts my best interests ahead of his or her own.
6. My leader gives me the freedom to handle difficult situations in the way that I feel is best.
7. My leader would not compromise ethical principles in order to achieve success.

The seven questions used by Grobler and Flotman (2020) were used to determine whether or not the servant leadership model explains the successful process in Noh Bec for managing in a sustainable manner their forest. The questions were the base for surveying 20 ejidatarios (10 men and 10 women) and discussing them in 2 informal community meetings, including ejidatarios and no ejidatarios, adult men and women, to measure the perception on the type of leadership exercised by the comisariado and the delegado (municipal government representative). The questions were not presented directly but explaining first the meaning and the intent of the words. Once the meaning was understood, sometimes explained in Maya, then the words of each dimension were used to guide the conversation. The word subordinate was not used at all; none of the community members nor any of the stakeholders listed in Table 1 considers a subordinate when it comes to discussing and deciding the management and the future of their forest.

Over 95% of the responses in each of the three exercises indicate a high level of trust to their leadership. The responses also allow to think that the perception of the community is that the leadership, involved in the decision-making process for designing the sustainable management of their forest, follows the pattern of the servant model. In fact, the expressions by several stakeholders do have the word serve on purpose: “We care for our people and nature, the comisariado serves both”; from the ejidatarios, “We trust our comisariado to follow our thinking, he serves us. If any comisariado does not listen and helps us, we remove them”; from

the representative of the municipal government, “I listen carefully to everybody in the community, I do my best to serve them, and to do my job bridging policies from the local government and local needs”; and from the municipality, “The municipality of Felipe Carrillo Puerto is ready to serve Noh Bec, not to take advantage of them.”

In all discussions, after giving the name of the leadership model, servant leadership resonated much more to all people interviewed. The stakeholders relate to this type of leadership much more than any other of the models analyzed.

Final Considerations

The successful sustainable management of the forest in Noh Bec, internationally recognized, is the result of multiple factors and stakeholders. Some of the multiple factors are the participation of the community, the access to information and technology, the coordination of activities, the decision-making process, and the access to financing and to national and international markets. The articulation of those factors had to include proper decisions, meeting the expectations of all different parties such as representatives from the Mexico-Germany Agreement and the Mexican government of all three levels (federal, state, and municipality); local authorities from Noh Bec, like the *comisariado ejidal* and the *delegado municipal*; and, of course, the *ejidatarios* (community members related to the *ejido*). Thus, the process of decision-making was critical along with the role of leaders from each segment of the stakeholders – not an easy process at all in any of the 85 years since Noh Bec was founded back in 1936.

Noh Bec has witnessed major difficulties. Several of the *ejido* representatives (called *comisariado ejidal*) had to resign due to mismanagement or not being up to the task; several of the representatives of the municipality in Noh Bec had to resign also because of the same reasons. The people in Noh Bec do not tolerate incompetence or leaders not representing their views, opinion, or fight to solve necessities. This situation is mentioned in all the literature regarding Noh Bec cited in this chapter.

Not only Noh Bec had to learn how to choose their representatives and make sure that they perform well but also the community had to endure forces of nature, drought, instability of markets and the economy, heavy rainfall, and diseases; one of the worse has been Hurricane Dean which, on August 21, 2007, destroyed the forest in all the central part of Quintana Roo, Mexico. Both the community and the forest recovered relatively fast after all of those difficulties; their resilience is impressive.

What factor or factors has/have played the most important role for the quick response/resilience to big challenges in Noh Bec? What lessons can we learn?

Addressing those questions is critical not only for the sustainable conservation of the forest in Noh Bec but for all the *Selva Maya*. Noh Bec is an important component of the *Selva Maya*, the second largest area covered by tropical forest in the Americas. The sustainability of the *Selva Maya* is tied to actions that aim at fighting climate

change and loss of biocultural diversity, among other benefits for local communities and to the planet.

Because societies, Indigenous and non-Indigenous, function with leaders playing important roles, although under different approaches, it is safe to consider that leadership played a critical role in the success on the sustainability of forest management in Noh Bec. Local participation was critical too, meaning non-Indigenous and Indigenous population (mostly Yucatec Maya) as well. Thus, what model of leadership has been implemented in Noh Bec? Was it willingly or not? It had to be a leadership model that suits the vision of Indigenous and non-Indigenous parties; it had to be able to bridge the needs, vision, and knowledge of the different cultures working together and achieving the success for which Noh Bec is known in Mexico and the world regarding forest management.

This chapter presents preliminary results of an ongoing research aiming at understanding the socio-ecological-political processes in and around Noh Bec, so that other communities within the Selva Maya can learn from, thus ensuring the sustainability of the whole Selva Maya. The results can also help the design of better public policies regarding natural resources management and the participation of local communities, either Indigenous, non-Indigenous, or multicultural.

The findings reported in this chapter support the hypothesis that the leadership model that explains the success in the ongoing process of successful sustainable and community management of the forest in Noh Bec is servant leadership, which coincides with the study by Ruwhiu and Elkin (2016) with the Maori people.

Although servant leadership is a non-Indigenous concept, it seems to have enough flexibility and principles aligned with the elements that different publications have identified in relation to leadership in Indigenous settings. Thus, servant leadership most likely helped to bridge the different visions, values, understandings, knowledges, and the like, between all the cultures represented among the stakeholders around the process of achieving sustainable management for the forest in Noh Bec. The decisions reached between all parties involved have provided good sources of livelihood and an enthusiastic participation by the community.

The second leadership model that seems to be present in the process is authentic leadership. However, according to Liden et al. (2008), authentic leaders strive to protect their followers' resources, whereas servant leaders emphasize the building of a serving culture that encourages followers to prioritize the needs of others. In the expressions collected from each stakeholder (Table 1), it is possible to confirm that servant leadership is on the stakeholders' mind, apparently without being conscious of. The word servant appears in the expressions from different stakeholders. According to McCann and Holt (2010), servant and sustainable leadership have emerged as important topics in today's global economy, a statement still pertinent nowadays.

As demonstrated in Noh Bec, encouraging servant leadership in the intercultural processes for decision-making requires identifying factors that promote or detract it. Based on the above analysis, it is now possible to point out at three of them: culture, attitudes, and world vision. From the Indigenous point of view, it is in their culture of respect, in their cosmogony, and in their values where these three factors

are embedded; therefore, the erosion and eventual loss of the culture also means the loss of intercultural agreements based on servant leadership (Faraz et al., 2021; Rosado-May et al., 2020a,b). On the other hand, non-Indigenous cultures with similar values of respect and cosmogony would have greater possibilities of encouraging green servant leadership and understandings with Indigenous peoples. This process is critical for designing strategies to fight climate change, loss of biodiversity, unsustainable food systems, and the like.

One effective way to promote green servant leadership is through education. In this regard, the intercultural models designed for all academic levels, from basic education to graduate programs, have the advantage of already working with Indigenous communities. However, it is important not to forget the basic definition of interculturality based on Rosado-May (2015): *It is the result of a process in which different ways (e.g. Indigenous and scientific method), of learning, constructing, innovating and transmitting knowledge coexist under a safe environment, creating conditions for new knowledge to emerge.* Non-intercultural institutions could develop training programs, courses, research, and extension activities based on this definition to promote the sustainable management of natural resources by implementing environmental servant leadership.

There is a sizable amount of literature documenting the critical role of governance in achieving sustainability in our natural resources (e.g., Springer et al., 2021); also, attention to the critical role of Indigenous peoples and local communities in effective and equitable conservation is growing (e.g., Dawson et al., 2021); however, few research has been conducted on determining the role of leadership models in achieving sustainable conservation of natural resources and the model that suits best the needs of the parties involved. This chapter tries to fill that gap and contribute to a sustainable planet.

Cross-References

- ▶ [Developing servant leadership for sustainable organizations](#)
- ▶ [Profile of servant leadership](#)
- ▶ [The history of leadership focus. How servant leadership has come to age](#)
- ▶ [The role of servant leadership in sustainable development](#)

Acknowledgments The authors wish to dedicate this essay to the multiple stakeholders, including the community, that lead Noh Bec to the internationally recognized position for sustainable forest management, all of them practically unnoticed. Although invisible, the Forest Stewardship Council certification, given to Noh Bec, carries their fingerprints.

References

Aboramadan, M., Kundi, Y. M., & Farao, C. (2021). Examining the effects of environmentally-specific servant leadership on green work outcomes among hotel employees: The mediating role

- of climate for green creativity. *Journal of Hospitality Marketing & Management*, 1–28. <https://doi.org/10.1080/19368623.2021.1912681>
- Adams, C. A., Heijltjes, M. G., Jack, G., Marjoribanks, T., & Powell, M. (2011). The development of leaders able to respond to climate change and sustainable challenges: The role of business schools. *Sustainable Accounting Management and Policy Journal*, 2(1), 165–171.
- Agraria, L. (2018). Ley agraria. Cámara de Diputados del H. Congreso de la Unión. Última Reforma, DOF 25-06-2018. Available via DIALOG. http://www.diputados.gob.mx/LeyesBiblio/pdf/13_250618.pdf. Accessed 23 Jan 2022.
- Aguirre Cortés, E., Escalona Segura, G., Macario Mendoza, P. A., León Cortés, J. L., Sánchez Pérez, L. C., & Schmook, B. (2020). Aprovechamiento forestal y diversidad arbórea en seis ejidos de Quintana Roo. *Revista Mexicana de Ciencias Forestales*, 11(60), 78–96. <https://doi.org/10.29298/rmcf.v11i60.701>
- Avolio, B. J., Walumbwa, F. O., & Weber, T. J. (2009). Leadership: Current theories, research, and future directions. *Annual Review of Psychology*, 60, 421–449. <https://doi.org/10.1146/annurev.psych.60.110707.163621>
- Barragán Alvarado, L. (2008). Pueblos indígenas y áreas protegidas en América Latina. Organización de las Naciones Unidas para la Agricultura y la Alimentación; Red Latinoamericana de Cooperación Técnica en Parques Nacionales, otras Áreas Protegidas, Flora y Fauna Silvestres; y Organismo Autónomo Parques Nacionales del Ministerio de Medio Ambiente y Medio Rural y Marino de España
- Beer, A. (2014). Leadership and the governance of rural communities. *Journal of Rural Studies*, 34, 254–262. <https://doi.org/10.1016/j.jrurstud.2014.01.007>
- Boas, I., Biermann, F., & Kanie, N. (2016). Cross-sectoral strategies in global sustainability governance: Towards a nexus approach. *International Environmental Agreements: Politics, Law and Economics*, 16, 449–464. <https://doi.org/10.1007/s10784-016-9321-1>
- Bonilla-Moheno, M., & García-Frappoli, E. (2012). Conservation in context: A comparison of conservation perspectives in a Mexican protected area. *Sustainability*, 4(9), 2317–2333. <https://doi.org/10.3390/su4092317>
- Brown, M. E., & Treviño, L. K. (2006). Ethical leadership, a review, and future directions. *The Leadership Quarterly*, 17(6), 595–616. <https://doi.org/10.1016/j.leaqua.2006.10.004>
- Brown, M. E., Treviño, L. K., & Harrison, D. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational Behavior and Human Decision Processes*, 97(2), 117–134. <https://doi.org/10.1016/j.obhdp.2005.03.002>
- Caredda, S. (2021). Leadership models: The theory and the practice. Part 9 of 12 entries in the series The Organisation Evolution Framework. Available via DIALOG. <https://sergiocaredda.eu/organisation/leadership-models-the-theory-and-the-practice/>. Accessed 23 Jan 2022.
- CONABIO. (2008). Manejo forestal comunitario bosques tropicales. Comisión Nacional para la Biodiversidad, gobierno de México. Available via DIALOG. http://www.conabio.gob.mx/2ep/images/f/f2/Luis_Alfonso_Argüelles_Ejido_Noh_Bec.pdf. Accessed 23 Jan 2022.
- Dalle, S. P., de Blois, S., Caballero, J., & Johns, T. (2006). Integrating analyses of local land-use regulations, cultural perceptions, and land-use/land cover data for assessing the success of community-based conservation. *Forest Ecology and Management*, 222(1–3), 370–383. <https://doi.org/10.1016/j.foreco.2005.10.052>
- Datta, B. (2015). Assessing the effectiveness of authentic leadership. *International Journal of Leadership Studies*, 9(1), 62–75.
- Dawson, N. M., Coolsaet, B., Sterling, E. J., Loveridge, R., Gross-Camp, N. D., Wongbusarakum, S., Sangha, K. K., Scherl, L. M., Phuong Phan, H., Zafra-Calvo, N., Lavey, W. G., Byakagaba, P., Idrobo, C. J., Chenet, A., Bennett, N. J., Mansourian, S., & Rosado-May, F. J. (2021). The role of Indigenous peoples and local communities in effective and equitable conservation. *Ecology and Society*, 26(3), 19. <https://doi.org/10.5751/ES-12625-260319>
- De Padua, A., & Rabbitskin, N. (1951). Working with indigenous leadership and indigenous environments. In: J. Wagner (Ed.), *Leadership and influencing change in nursing*. University of Regina. Available via DIALOG. <https://leadershipandinfluencingchangeinnursing>.

- pressbooks.com/chapter/chapter-3-working-with-indigenous-leadership-and-indigenous-environments/. Accessed 22 Jan 2022.
- Ellis, E. A., Kainer, K. A., Sierra-Huelsz, J. A., Negreros-Castillo, P., Rodriguez-Ward, D., & DiGiano, M. (2015). Endurance and adaptation of community forest management in Quintana Roo, Mexico. *Forest*, 6, 4295–4327. <https://doi.org/10.3390/f6114295>
- Ellis, E. A., Navarro Martínez, A., García Ortega, M., Hernández Gómez, I. U., & Chacón Castillo, D. (2020). Forest cover dynamics in the Selva Maya of Central and Southern Quintana Roo, Mexico: Deforestation or degradation? *Journal of Land Use Science*, 15(1), 25–51. <https://doi.org/10.1080/1747423X.2020.1732489>
- Eva, N., Robin, M., Sendjaya, S., van Dierendonck, D., & Liden, R. C. (2019). Servant leadership: A systematic review and call for future research. *The Leadership Quarterly*, 30(1), 111–132. <https://doi.org/10.1016/j.leaqua.2018.07.004>
- Faraz, N. A., Ahmed, F., Ying, M., & Mehmood, S. A. (2021). The interplay of green servant leadership, self-efficacy, and intrinsic motivation in predicting employees' pro-environmental behavior. *Corporate Social Responsibility and Environmental Management*, 28(4), 1171–1184. <https://doi.org/10.1002/csr.2115>
- Fry, L. W., & Egel, E. (2021). Global leadership for sustainability. *Sustainability*, 13, 6360. <https://doi.org/10.3390/su13116360>
- Galletti, H. (1999). La selva maya en Quintana Roo (1983–1996), trece años de conservación y desarrollo comunal. En R. B. Primack, D. Bray, H. A. Galletti, & I. Poncian (Eds.), *La selva maya: conservación y desarrollo*. Siglo XXI, México
- Garnett, S. T., Burgess, N. D., Fa, J. E., Fernández-Llamazares, Á., Molnár, Z., Robinson, C. J., Watson, J. E. M., Zander, K. K., Austin, B., Brondizio, E. S., Collier, N. F., Duncan, T., Ellis, E., Geyle, H., Jackson, M. V., Jonas, H., Malmer, P., McGowan, B., Sivongxay, A., & Leiper, I. (2018). A spatial overview of the global importance of indigenous lands for conservation. *Nature Sustainability*, 1(7), 369–374. <https://doi.org/10.1038/s41893-018-0100-6>
- Gladstone, J. S., & Pepion, D. D. (2017). Exploring traditional indigenous leadership concepts: A spiritual foundation for Blackfeet leadership. *Leadership*, 13(5), 571–589. <https://doi.org/10.1177/1742715016638913>
- Glass, L.-M., & Newing, J. (2019). Governance for achieving the Sustainable Development Goals: How important are participation, policy coherence, reflexivity, adaptation, and democratic institutions? *Earth System Governance*, 2. <https://doi.org/10.1016/j.esg.2019.100031>
- González Sosa, A. (2018–2021). Ejido Noh-Bec, fortalecimiento del manejo forestal sustentable con enfoque de paisaje. Available via DIALOG. https://issuu.com/elytish/docs/noh_bec__3_. Accessed 23 Jan 2022.
- Gram-Hanssen, I. (2021). Individual and collective leadership for deliberate transformations: Insights from Indigenous leadership. *Leadership*, 17(5), 519–541. <https://doi.org/10.1177/1742715021996486>
- Grobler, A., & Flotman, A.-P. (2020). The validation of the servant leadership scale. *SA Journal of Industrial Psychology*, 46(1), 1–12. <https://doi.org/10.4102/sajip.v46i0.1754>
- Hair, J. F., Jr., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis*. Pearson Education Inc.
- Hardison-Stevens, D. E. (2014). Knowing the indigenous leadership journey: Indigenous people need the academic system as much as the academic system needs Native people. Dissertations & Theses, 83, Antioch University
- Holland, M. B., de Koning, F., Morales, M., Naughton-Treves, L., Robinson, B. E., & Suárez, L. (2014). Complex tenure and deforestation: Implications for conservation incentives in the Ecuadorian Amazon. *World Development*, 55, 21–36. <https://doi.org/10.1016/j.worlddev.2013.01.012>
- Iordanoglou, D. (2018). Future trends in leadership development practices and the crucial leadership skills. *Journal of Leadership, Accountability and Ethics*, 15(2), 118–129. <https://doi.org/10.33423/jlae.v15i2.648>

- Jago, A. G. (1982). Leadership: Perspectives in theory and research. *Management Science*, 28(3), 221–339. <https://doi.org/10.1287/mnsc.28.3.315>
- Janka, H. (1981). Bases metodológicas para la formulación de un programa de investigación de uso múltiple en el trópico húmedo. En Estudios del acuerdo sobre planificación y uso de recursos forestales tropicales México-Alemania. Instituto Nacional de Investigaciones Forestales, SARH
- Jensen, U. T., Andersen, L. Ø., Bro, L. L., Bøllingtoft, A., Mundbjerg Eriksen, T. L., Holten, A.-L., Jacobsen, C. B., Ladenburg, J., Nielsen, P. A., Salomonsen, H. H., Westgård-Nielsen, N., & Würtz, A. (2019). Conceptualizing and measuring transformational and transactional leadership. *Administration and Society*, 51(1), 3–33. <https://doi.org/10.1177/0095399716667157>
- Kelley, J. (2018). The crucible's gift: 5 lessons from authentic leaders who thrive in adversity. *Executives After Hours*, Vancouver
- Keyes Hennin, M. R. (1998). Cultura forestal en Quintana Roo, México; observaciones y perspectivas. *Madera y Bosques*, 4(1), 3–13.
- Knies, E., Jacobsen, C., & Tummers, L. G. (2016). Leadership and organizational performance: State of the art and research agenda. In: J. Storey, J. L. Denis, J. Hartley, & P. 't Hart (Eds.), *Routledge companion to leadership* (pp. 404–418). Routledge
- Lee, Y.-D., Chen, P.-C., & Su, C.-L. (2020). Evolution of the leadership theories and the analysis of new research trends. *International Journal of Organizational Innovation*, 12(3), 88–104.
- Liden, R. C., Wayne, S. J., Zhao, H., & Henderson, D. (2008). Servant leadership: Development of a multidimensional measure and multi-level assessment. *The Leadership Quarterly*, 19(2), 161–177. <https://doi.org/10.1016/j.leaqua.2008.01.006>
- Luu, T. T. (2020). Integrating green strategy and green human resource practices to trigger individual and organizational green performance: The role of environmentally-specific servant leadership. *Journal of Sustainable Tourism*, 28(8), 1193–1222. <https://doi.org/10.1080/09669582.2020.1729165>
- Madrid Zubirán, S. (2015). Noh Bec recupera el certificado FSC y ratifica su vocación de sustentabilidad. Consejo Civil Mexicano para la Silvicultura Sostenible, marzo, 11. Available via DIALOG. <https://www.cmss.org.mx/noh-bec-recupera-el-certificado-fsc-y-ratifica-su-compromiso-con-la-sustentabilidad/>. Accessed 23 Jan 2022.
- Martínez, W. E., Reyna-Hurtado, R. A., Naranjo, E. J., Thornton, D., Cal, R. N., & Figueroa, O. A. (2021). Occupancy rate and observations of Baird's tapir (*Tapirella bairdii*) near waterholes in the Maya forest corridor, Belize. *Therya*, 12(1), 37–43. <https://doi.org/10.12933/therya-21-969>
- Martínez-Reyes, J. E. (2014). Beyond nature appropriation: Towards post-development conservation in the Maya forest. *Conservation and Society*, 12(2), 162–174. <https://doi.org/10.4103/0972-4923.138417>
- McCann, J., & Holt, R. (2010). Servant and sustainable leadership: An analysis in the manufacturing environment. *International Journal of Management Practice*, 4, 134–148.
- Mcgroddy, M., Lawrence, D., Schneider, L., & Rogan, J. (2013). Damage patterns after hurricane Dean in the southern Yucatan: Has human activity resulted in more resilient forest? *Forest Ecology and Management*, 310, 812–820. <https://doi.org/10.1016/j.foreco.2013.09.027>
- Navarro-Martínez, A., Durán-García, R., & Méndez-González, M. (2012). The impact of the hurricane Dean on the structure and arboreal composition of a managed forest in Quintana Roo, Mexico. *Madera y Bosques*, 18(1), 57–76.
- Odumeru, J. A., & Ifeanyi, G. O. (2013). Transformational vs transactional leadership theories: Evidence in literature. *International Review of Management and Business Research*, 2(2), 355–361.
- Peterson, R. J. (2018). *Uncovering Indigenous models of leadership. An ethnographic case study of Samoa's Talavou clan*. Lexington Books.
- Redpath, S. M., Young, J., Evely, A., Adams, W. M., Sutherland, W. J., Whitehouse, A., Amar, A., Lambert, R. A., Linnell, J. D. C., Watt, A., & Gutiérrez, R. J. (2013). Understanding and managing conservation conflicts. *Trends in Ecology & Evolution*, 28(2), 00–109. <https://doi.org/10.1016/j.tree.2012.08.021>
- Robbins, S. P., & Coulter, M. (2007). *Management* (9th ed.). Prentice-Hall.

- Romero Navarrete, L. (2015). El ejido mexicano: entre la persistencia y la privatización. *Argumentos*, 28(79), 217–238.
- Rosado-May, F. J. (2015). The Intercultural origin of agroecology: Contributions from Mexico. Chapter 8. In V. E. Méndez, C. M. Bacon, R. Cohen, & S. R. Gliessman (Eds.), *Agroecology: A transdisciplinary, participatory and action-oriented approach* (Advances in Agroecology Series) (pp. 123–138). CRC Press/Taylor and Francis.
- Rosado-May, F. J., Cuevas-Albarrán, V. B., & Jimenez Pat, N. F. (2020a). Intercultural Leadership: an indigenous perspective in a multicultural world. Chapter 16. In S. Dhiman & J. Marquez (Eds.), *New horizons in positive leadership and change. A practical guide for workplace transformation* (pp. 285–311). Springer. <https://doi.org/10.1007/978-3-030-38129-5>
- Rosado-May, F. J., Urrieta, L., Jr., Dayton, A., & Rogoff, B. (2020b). Innovation as key feature of Indigenous Ways of Learning: Individuals and communities generating knowledge. In N. Suad Nasir, C. Lee, R. Pea, & M. McKinney de Royston (Eds.), *Handbook of the cultural foundations of learning* (pp. 79–95). Routledge. Chapter 5.
- Ruwhiu, D., & Elkin, G. (2016). Converging pathways of contemporary leadership: In the footsteps of Māori and servant leadership. *Leadership*, 12(3), 308–323. <https://doi.org/10.1177/1742715015626326>
- Schumacher, M., Durán-Díaz, P., Kurjenoja, A. K., Gutiérrez-Juárez, E., & González-Rivas, D. A. (2019). Evolution and collapse of Ejidos in Mexico -To what extent is communal land used for urban development? *Land*, 8(10), 146. <https://doi.org/10.3390/land8100146>
- Siddiquei, A., Asmi, F., Asadullah, M. A., & Mir, F. (2021). Environmental-specific servant leadership as a strategic tool to accomplish environmental performance: A case of China. *International Journal of Manpower*, 42(7), 1161–1182. <https://doi.org/10.1108/IJM-07-2020-0350>
- Sobrevila, C. (2008). *The role of indigenous peoples in biodiversity conservation: The natural but often forgotten partners*. The International Bank for Reconstruction and Development.
- Springer, J., Campese, J., & Nakangu, B. (2021). *The Natural Resource Governance Framework – Improving governance for equitable and effective conservation*. IUCN. <https://doi.org/10.2305/IUCN.CH.2021.16.en>
- Tadeo Ferral, E. (2020). . . . Y así se fundó el ejido. Monografía del ejido Noh Bec. Taller Editorial Redacción
- The World Bank. (2018). Indigenous peoples. understanding poverty. Available via DIALOG. <https://www.worldbank.org/en/topic/indigenouspeoples>. Accessed 20 Jan 2022.
- Tuan, L. T. (2020). Environmentally-specific servant leadership and green creativity among tourism employees: Dual mediation paths. *Journal of Sustainable Tourism*, 28(1), 86–109. <https://doi.org/10.1080/09669582.2019.1675674>
- Tuan, L. T. (2021). Effects of environmentally-specific servant leadership on green performance via green climate and green crafting. *Asia Pacific Journal of Management*, 38(3), 925–953. <https://doi.org/10.1007/s10490-019-09687-9>
- Van Dierendonck, D., & Nuijten, I. (2011). The servant-leadership survey (SLQS): Development and validation of a multidimensional measure. *Journal of Business and Psychology*, 26(3), 249–267. <https://doi.org/10.1007/s10869-010-9194-1>
- Voyageur, C., Brearley, L., & Calliou, B. (2015). *Restoring Indigenous leadership: wise practices in community development* (2nd ed.). Banff.
- Walker, W., Baccini, A., Schwartzman, S., Ríos, S., Oliveira-Miranda, M. A., Augusto, C., Ruiz, M. R., Arrasco, C. S., Ricardo, B., Smith, R., Meyer, C., Jintiach, J. C., & Campos, E. V. (2014). Forest carbon in Amazonia: The unrecognized contribution of indigenous territories and protected natural areas. *Carbon Management*, 5(5–6), 479–485. <https://doi.org/10.1080/17583004.2014.990680>
- Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., & Peterson, S. J. (2008). Authentic leadership: Development and validation of a theory-based measure. *Journal of Management*, 34(1), 89–126. <https://doi.org/10.1177/0149206307308913>