



VOLUME 5 ISSUE 3

# Food Studies

An Interdisciplinary Journal

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## Food Security and Indigenous Peoples Knowledge

El Buen Vivir-Sumaq Kawsay in Peru and Tē Atānoho, New Zealand, Māori-New Zealand

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**FOOD STUDIES: AN INTERDISCIPLINARY JOURNAL**  
www.food-studies.com

First published in 2015 in Champaign, Illinois, USA  
by Common Ground Publishing LLC  
www.commongroundpublishing.com

ISSN: 2160-1933

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# Food Security and Indigenous Peoples Knowledge: El Buen Vivir-Sumaq Kawsay in Peru and Tē Atānoho, New Zealand, Māori-New Zealand

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*Abstract: In light of the expected global demand for food we need to feed the estimated 9.6 million people by 2050, food security is a major concern. Numerous attempts to achieve food security have been made. However, primary focus is often placed on adopting industrialised approaches to safeguarding food security. As a result, an emphasis has been placed on increasing agriculture production using scientific-technological approaches. The contribution of Indigenous People's knowledge in food security is often overlooked in scholarly literature. This paper analysis the "Sumaq Kawsay" and Tē Atānoho, good living philosophies embraced by the Indigenous Peoples of Peru and New Zealand in safeguarding food security.*

*Keywords: Food Security, Indigenous Knowledge, Sumaq Kawsay, Tē Atānoho, New Zealand*

## Introduction

**B**ecause food is unavailable, inaccessible, and/or unaffordable to hundreds of millions of people, in particular for the 842 million malnourished people who constitute 12 per cent of the world population, food security is a worldwide problem (Food and Agriculture Organisation (FAO) 2013c; Leifeld 2012; Patel 2013; Prakash 2011).

What is food security?

It is "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life." (World Food Summit 1996)

Attempts to improve food security are taking place worldwide, involving many different organisations, development agencies, and programmes (see FAO 2013b; IFAD 2011; Organisation for Economic Co-operation and Development (OECD) 2013a; Oxfam 2011; World Health Organization (WHO) 2003; World Food Programme (WFP) 2013). Similarly, numerous high technological and scientific research projects on food security have considered post-harvest technology, biotechnological techniques and the new technical frontier of Genetically Modified Organisms (GMOs) (see CGIAR 2012a; International Rice Research Institute (IRRI) 2013; Heinemann et al. 2013; Zhao and McGrath 2009).

Gorgestani (2000) and Sen (2005) believe that Indigenous knowledge's potential to contribute to food security and sustainable agriculture production should not only be recognised but that it is an important consideration. These scholars' views are supported by pioneering research conducted on the traditional food systems of Indigenous peoples in the Americas and the Arctic (Conklin 1957; Levi-Straus 1971; Posey 1985). Their investigations suggested that Indigenous knowledge about the sustainable use and management of natural resources is essential for the sustainability of healthy ecosystems and ultimately for food security. However, there has been little scholarly research on the contribution of Indigenous knowledge in a contemporary economic context. An exception is the work on Agroecology by Altieri (1995; 1999; 2010).

This article is centred on the analysis of the knowledge embedded in the Andean peoples' good living philosophy of "Sumaq Kawsay" or "Buen Vivir," the Andean principle of "good living," and New Zealand "Tē Atānoho" the Māori concept of "good life" as guiding philosophies

for the utilisation of Indigenous knowledge concerning food security. Sumaq Kawsay describes the Andean Indigenous people's approach to living in harmony within communities, within themselves, and with Pachamama (Mother Earth) (Dávalos 2008; Lajo 2012). Conversely, the Māori of Aotearoa are the Indigenous people of New Zealand, who share a common worldview with regard to creation, ecology, ethics and custom towards their Papatūānuku (Earth Mother) (Barlow 1993; Salmond 1976). These philosophies are considered to be windows into the world of Indigenous peoples (Cajete 2000; LaDuke 1994; Lajo 2012).

This paper begins with an overview of the state of global food security, followed by an outline about Indigenous peoples and their traditional knowledge. Then turn to the concept of food sovereignty seen *through an Indigenous lens* to discuss the potential contribution of Indigenous people's knowledge in food security, embodied in their 'good living' philosophies. This paper concludes with a discussion of how Indigenous good living philosophies can provide a model for promoting food security.

## Food Security: A Global Overview

The widely accepted definition of food security is derived from the World Food Summit Plan of Action held in Rome in 1996.

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” (The Rome declaration on world food security 1996)

Food security is still considered a key goal. This is due to the global concerns about:

- (a) Malnutrition where about 850 million people in the world and who mostly live in developing countries are undernourished.
- (b) Rapid population growth with an estimated population of 9.6 billion people by 2050 poses the challenge of feeding citizens worldwide without compromising the fragile natural ecosystems.
- (c) Changing in diets toward greater consumption of meat and dairy products.
- (d) High mortality rates of children in Africa caused by hunger and malnutrition (UNEP 2009; FAO 2013c).

Of particular concern are 34 developing countries that as of November 2013 are facing serious food insecurity and rely on external food assistance for survival (FAO 2013a). Consequently, food security has been embraced as a key concept by major international programmes, governments and citizens to counteract the problems of availability, accessibility and adequacy (Table 1) (Kloppenber 2010a; Lerche 2013).

Table 1: Three Main Food Security Challenges

<b><i>Food availability</i></b>	<b><i>Food accessibility</i></b>	<b><i>Food adequacy</i></b>
This suggests that there is sufficient quantity and appropriate quality of food for people being supplied through domestic production or imports.	This is manifested when individuals have access to adequate resources as well as the entitlements to acquire appropriate foods for a nutritious diet. According to Sen’s entitlement approach (1981), entitlements consist of all those alternative commodity bundles, in particular food, which a person is entitled to and can decide to consume.	This is expressed when food satisfy dietary needs, and the food is safe for human consumption. Adequate food should also be culturally acceptable.

*Source: Adapted from Dana 2013, Menezes 2001, Maxwell and Slater 2003; Parnell 2005, Prakash 2011, and Sen 1981.*

These challenges are not only a problem for developing countries where the vast majority of people, 852 million people reside, but also for developed countries where 16 million are estimated to be undernourished (Table 3) (Food and Agriculture Organisation (FAO) 2013c; Leifeld 2012; Patel 2013; Prakash 2011).

Table 2: Undernourishment in the Developing Regions 1990–92 to 2010–12

YEARS	Number (millions) and prevalence (%) of undernourishment				
	1990–92	1999–2001	2004–06	2007–09	2010–12*
WORLD	1000 18.6%	919 15%	898 13.8%	867 12.9%	868 12.5%
DEVELOPED REGIONS	20 1.9%	18 1.6%	13 1.2	15 1.3%	16 1.4%
DEVELOPING REGIONS	980 23.2%	901 18.3%	885 16.8%	852 15.5%	852 14.9%

*Source: Adapted by the Author Based on FAO (2012).*

The debate on best approaches to address food security is often centred on the current industrial model of food production characterised by large-scale farming and the adoption of scientific-technological systems such as the use of Genetically Modified Organisms (GMOs) (Bernstein 2013; Collier 2008; Dana 2013; Pimbert 2009). On the other hand, traditional agriculture is rooted in Indigenous traditional knowledge originated from the intimate relationship between Indigenous peoples and nature, such traditional knowledge has been preserved and passed on from generations through oral history (Altieri 1995; Berkes 2004).

The argument that the industrial model has not succeeded in achieving food security, since hunger and poverty still persist worldwide has led to the concept of food sovereignty taking centre stage in the last two decades (Dana 2013; Gilbert 2012; Prakash 2011). The food sovereignty concept strives for policy change in the social, political and environmental context, and supports Indigenous peoples’ worldview, rights and self-determination to produce food in a sustainable manner for the next generations (La Vía Campesina 1996; Patel 2013). Food sovereignty advocates (see De Schutter 2009; Kloppenberg 2010a; Lerche 2013; Wittman et al. 2010) highlight the importance of small-scale agriculture and Indigenous traditional ecological

knowledge. The following section provides an overview of the concept of food sovereignty seen from an Indigenous lens and as a critical alternative to the concept of food security.

## **Food Sovereignty from an Indigenous perspective**

The “Food sovereignty” concept was coined by La Via Campesina in 1996 as

“The right of nations and peoples to control their own food systems, including their own markets, production modes, food cultures and environment.” (Wittman et al. 2010 2)

La Via Campesina (2011), an international movement of small producers and Indigenous farmers based in the North and South argues against the idea that food can be treated as a commodity and point out the Havana Declaration of the 2001 World Forum on Food sovereignty that states: “We affirm that food is not just another merchandise and that the food system cannot be viewed solely according to market logic” (WFFS 2001 2). The food sovereignty movement argues that local food systems provide a living for more than 2.5 billion small-scale farmers, pastoralists and forest dwellers, and provide the foundation of people’s nutrition, incomes, ecologies and culture throughout the world (Pinstrupp-Andersen 2009; Pimbert 2009). However, despite their current role in and future potential for meeting human needs and preserving diverse ecologies, local food systems and the Indigenous farmers that govern them, are endangered (De Schutter and Vanloqueren 2011; Loomis 2000).

They are threatened by two main issues, (a) the conflicting paradigm between their traditional agricultural perspectives to food production with a modern approach to food production, and (b) Their limited control on food distribution and power with regards to making decisions about how, where and by whom food is produced (Altieri 2010; Bernstein 2010; McMichael 2009a).

In more detail point (a) and (b) is explained below:

### ***(a) Traditional and Modern Agricultural Perspectives to Food Production***

Traditional food production approach is engrained in the Indigenous perspective of sustainable agricultural systems, exemplified in polycultural farming, which employs various traditional agricultural methods (Koochafkan and Altieri 2005). Bello (2007) and Desmarais (2007) argue that Indigenous peoples’ cultivation systems methods are respectful of nature, producing food with less high-input technology. These methods have been acclaimed for the long-term production of better quality of food, so that the high-yield food production approach of industrialised countries is now questioned. In contrast, industrial food production philosophy is based on the monoculture farming model building on the assumption that soil fertility could be maintained and increased through the use of high-input technology, chemicals and pesticides in order to generate higher yields but at a higher cost to the environment (Bello 2007; Pimbert 2010). Perfecto et al (2009) and Altieri (2001 and 2005) argue that that a growing human population depends on the ecological services provided by nature such as climate balance, pollination, and soil fertility, as well as traditional knowledge from Indigenous peoples which intensive industrial agriculture pushes beyond the tipping point.

### ***(b) Food Sovereignty Issues: Corporate Control***

Point (b) can be illustrated by the expansion of industrial plantations for the production of commodities such as soy, and sugarcane into wetlands and forests that has raised social and environmental issues, for instance, land-grabbing, deforestation and soil degradation (Oxfam 2011).

Table 6 indicates that 40 per cent of the world’s export comes from the top four agricultural commodities. All these crops are grown mainly on big industrial farms (IRRI 2013, GRAIN 2014).

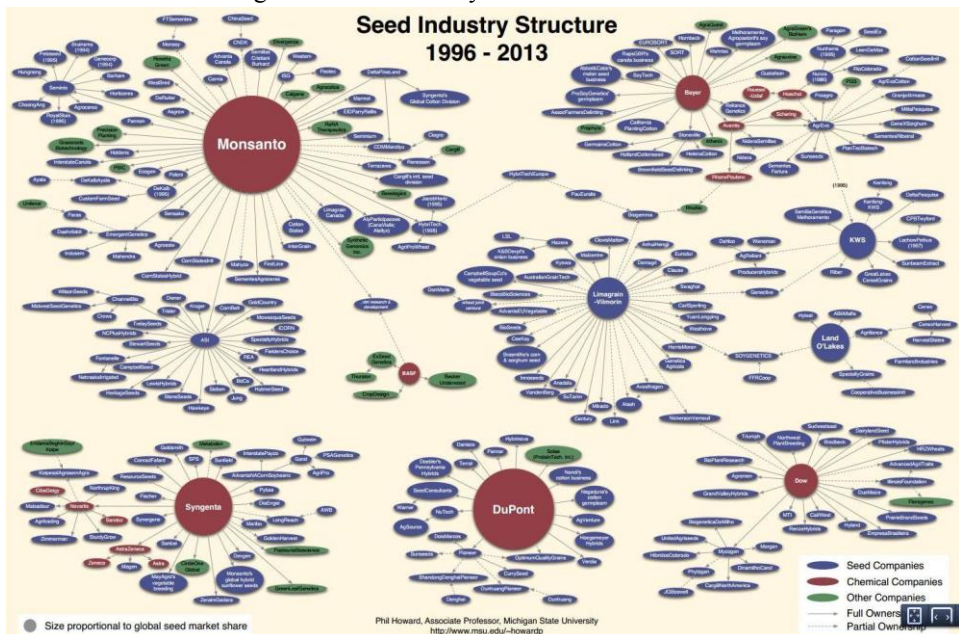
Table 3: 40% Export from 4 commodities

	Million tones
Wheat	145158611
Maize	107864923
Soy beans	93983884
Palm oil	35318819

Source: Adapted by the author based on FAOSTAT (2014).

Also, MNFCs have intensified investments of Genetically Modified Organisms (GMOs) of Indigenous food crops such as maize with the aim to increase agricultural production (McMichael 2010; Patel 2013; Pimbert 2009; Valletta 2010). An example is the structure of the global seed industry. In 2009, Phillip Howard from the Michigan State University produced one of most comprehensive studies up-to date of the global seed industry. In Howard’s visualisation diagram (Figure 2), the seed industry has undergone tremendous consolidation in the last 40 years due to the transnational corporations acquiring and merging with competing firms. As a result, the seed industry is dominated by five transnational corporations: Monsanto, Syngenta, Bayer, Dow, and Dupont (Howard 2009). Particularly, the seed industry is controlled by Monsanto (GMOs seed bank) that through seeking intellectual property rights have control of seeds patents of major Indigenous crops such as corn and potatoes (Howard 2009; Wittman et al. 2010).

Figure 1. Seed Industry Structure 1996–2013



Source: Howard (2009, 1275)

All these aforementioned concerns provide the basis for a view of food sovereignty that seeks for policy change in the social, political and environmental supporting small scale Indigenous farmers worldwide to be self-sufficient and continuing to produce food in a sustainable manner for the next generations (La Vía Campesina 1996; Patel 2013). Several

national governments have integrated food sovereignty into their national constitutions, for example, Venezuela, Mali, Bolivia, Ecuador, and Nepal (Wittman et al. 2010; Pimbert 2009). Ecuador is an example of the struggles of Indigenous farmers for food sovereignty, exemplified in the final result of strong social movements and political confrontations with the governments in power over the last decade (Quijano 2000; 2011; Peña 2008). These social movements mainly comprised of Indigenous peoples throughout the country demanded for the governments in power to respect their ancestors' Sumaq Kawsay or "good living" approach eroded by the neoliberal model. The good living approach entailed Indigenous farmers to regain control, power, and autonomy in their food systems. This eventually resulted in the implementation of food sovereignty in the Ecuadorian Constitution in 2010 (Peña 2008; SENPLADES 2009).

This section discusses the Indigenous people's good living philosophies, particularly Sumaq Kawsay and Tē Atānoho to demonstrate how Indigenous peoples' knowledge embodied in their good living philosophies have the potential to provide a model for promoting food security.

## Indigenous Good Living Philosophies

Indigenous good living philosophies are found in various Indigenous societies, for example, in North America; the *Anishinaabeg people*, South America; the Andean people, and New Zealand; the Māori people. These two Indigenous values have endured intact, in spite of colonisation and today's modern world (Argumedo 2012). The similarities of Indigenous peoples world views is illustrated in the shared tenets of reciprocity, cyclical thinking, connection and relationship between the Indigenous peoples of Peru, New Zealand and their Earth Mother (Argumedo 2012; Lajo 2011; Henry and Pene 2001; Hēnare 2001; Smith 2012). The Indigenous philosophy of "Good living" by the Andean people (Sumaq Kawsay) and Māori (Tē Atānoho) regarding food security provide a case in point (Lajos 2011; La Duke 2005,) and will be explained further below.

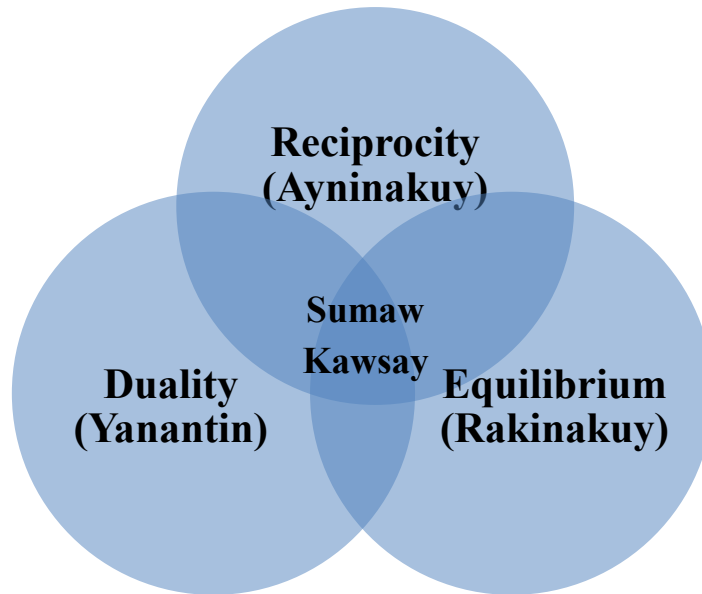
## Sumaq Kawsay

The academic literature on the Sumaq Kawsay concept in Peru is limited, with the exception of Peruvian Indigenous scholar Javier Lajo (2011; 2012). In Lajo's (2011) view, the Sumaq Kawsay symbolises a unique connection or bonding commitment between humans (within themselves) and with Pachamama (Earth Mother). Therefore, Sumaq Kawsay is "*living in harmony and equilibrium within yourself, within community and with Pachamama*" (Lajo 2011). This Andean concept suggests that humans adopt the ideology of 'equilibrium' which is the native view of commensuration and harmony within themselves, Cosmovision and Pachamama (Mother Earth). Therefore, the Sumaq Kawsay is based on the philosophy of a sustainable use of the natural resources available on Pachamama, and managed according to sustainability principles; principles of reciprocity, community and family solidarity; and the application and transmission of ancestral knowledge (Lajo 2005; 2011).

In Lajo's (2011) view, the Sumaq Kawsay principle adopts the Andean worldview of "collective knowledge" represented in the tenets of reciprocity, duality and equilibrium (Figure 1) (Dávalos 2005; 2009; 2012).



Figure 2: Andean Worldviews embedded in the “Sumaq Kawsay” concept.



Source: Adapted from Argumedo (2010).

According to Lajo (2011), the Andean worldviews embedded in the Sumaq Kawsay are duality, equilibrium and reciprocity, and explained briefly below:

- Duality (Yanantin) comprises common rights and obligations from both men and women with the view to meet and achieve harmony and maintain equilibrium.
- Equilibrium (Rakinakuy) refers to the proportion and harmony with nature Pachamama, the cosmos, and among community members.
- Reciprocity or Ayni, is one of the most important tenet for the Andean people and is exemplified in the metaphor *what is received must be returned in equal measure*.

The Inca society was guided by the “good living” principle—Sumaq Kawsay embedded in their agricultural system approach and characterised by the development of traditional farming techniques. This enabled the Inca to maintain a steady growth of sustainable agricultural production and food security (Grim and Tucker 2010).

According to Argumedo and Wong (2010), in the Andean agricultural system, the “Ayni” principle is exemplified in the exchange of community work between “families” commonly referred in Quechua as “ayllus.” Therefore, the “Ayni” was not simply an act of trade-off between families, but more importantly encapsulated a set of Indigenous values and beliefs with regard to ethics and human well-being (Lajo 2011; ANDES 2012). They further suggested that the Andean communities succeeded in satisfying the hunger of their people due to the adoption of the “Ayni” system in their farming practices.

### **Tē Atānoho**

Similarly, to the Sumaq Kawsay is the principle of “Tē Atānoho” in New Zealand. The Māori worldview constitutes of the traditional belief of creation exemplified in the mythological account of Māori’s forebears Ranginui (Sky father) and Papatūānuku (Earth Mother) (see Barlow 1993; Durie 1994). This belief illuminates Māori cosmic religious worldview for “love of

wisdom and search for knowledge of things and their causes” (Hēnare 2001 198). At the centre of this view of life, lie the Māori philosophy and ethical values toward humanity, the natural world and more importantly their unconditional love for their Papatūānuku (Earth Mother).

The Māori reciprocity stance is also based in the ‘collectivist’ principle, manifested in the belief that the universe is a dynamic, creative and continuous space that is complemented with the essence of life-force (Williams and Hēnare 2009; Spiller et al. 2010). Following from the essence of Māori worldview, Hēnare (2011) reasons that in the Māori version of the Treaty of Waitangi referred to in the Māori language as the “Te Tiriti o Waitangi” 1840, specifically in the Preamble of protection of the good life as defined by Māori “tonu hoki te Rongo”— Atānoho (peace and continued life as a Māori people—good life), and in Article 1 of the *Tiriti*—Right to self-determination or Kawanatanga Katoa o Rātou Wenua (Governance for ever of their lands) rests the fundamentals of the Māori principle of “*Tē Atānoho*” or “*good life*” that encapsulates the Māori Indigenous worldview of vitalism, humanism and reciprocity mentioned above (Hēnare 2001; 2003; 2011).

The Māori philosophy of “vitalism, humanism, and reciprocity” is at the interface of the Andean philosophy of “equilibrium, duality and ayni” please see table two below:

Table 4: Key Tenets of Sumaq Kawsay and Tē Atānoho

<b>Sumaq Kawsay</b>	<b>Tē Atānoho</b>
Duality	Humanism
Equilibrium	Vitalism
Ayni	Reciprocity

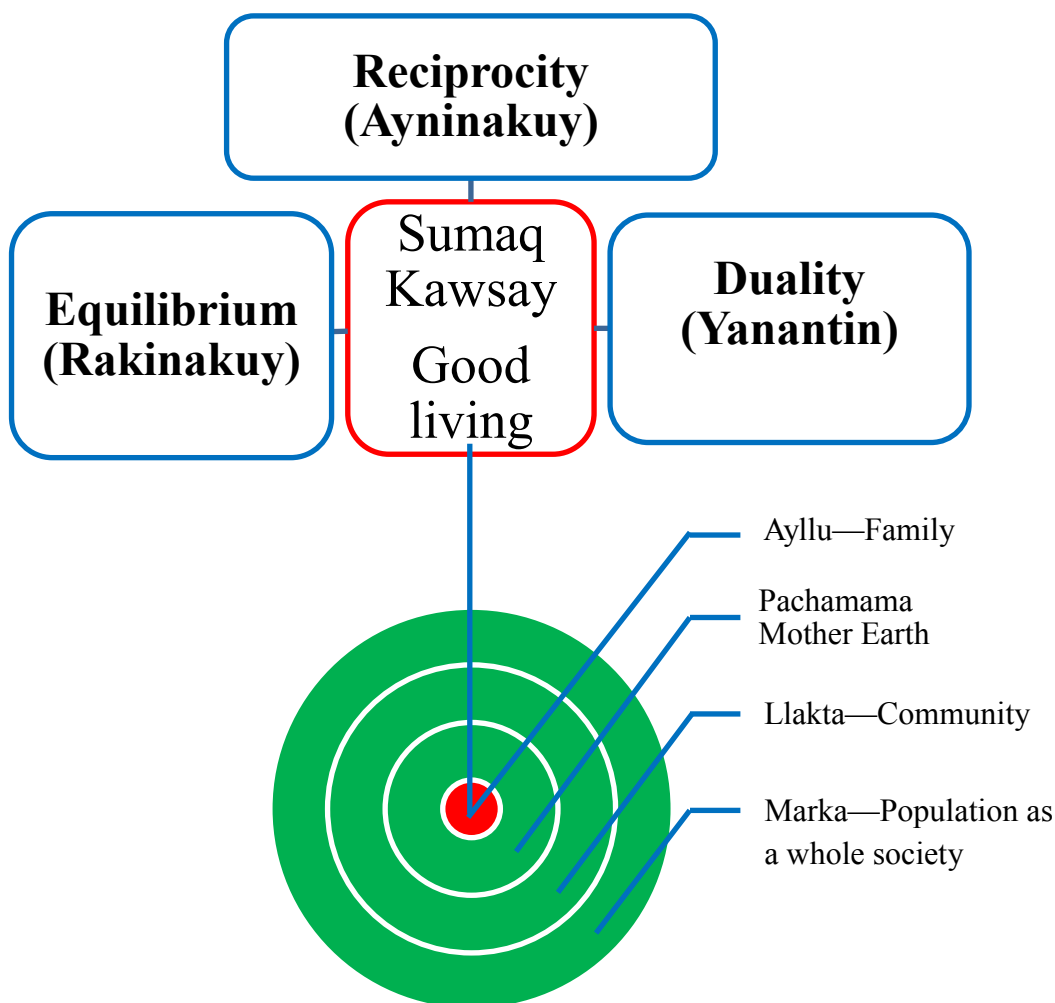
*Source: Adapted from Hēnare (2011) and Argumedo (2010).*

From an Indigenous stance, Hēnare (2011) contests that “Tē Atānoho” reflects a unique Māori principle of economic development that is the principle of a “good life” which encapsulates the Māori philosophy of vitalism, humanism and reciprocity. Similarly, advocates of Sumaq Kawsay, for example Argumedo (2013), Lajo (2011), and particularly the President of Bolivia Evo Morales (2010) question whether the Sumaq Kawsay provides the basis for an alternative ‘good living’ approach.

### **A Good Living Philosophy Approach to Improve Food Security**

Consequently, this paper argues that Indigenous peoples worldview of the “good living” philosophy represents an Indigenous principle for promoting food security. A philosophy that does not solely focus on economic growth but rather, places an emphasis on Indigenous peoples’ tenets of duality, equilibrium, and reciprocity in order to enjoy and preserve the bounties of Pachamama to safeguard food security. In order to illustrate the suggested Indigenous model for promoting food security, the Andean good living philosophy of Sumaw Kawsay is depicted below.

**An Indigenous Food Security Model: Based on the Sumaq Kawsay Principle**



***How Does the Indigenous Food Security Model Work?***

For the Andean people “Sumaq Kawsay” is a lifestyle that maintains equilibrium among four main important concepts: ayllu—family, llakta—community, Pachamama—Mother Earth, and Marka—population as a whole (Figure 3) (Lajo 2005). These Quechua concepts comprise a societal structure focused on maintaining a balance in order to promote “collective well-being” (Espinoza 1997). This collective well-being is adopted in the Andean agricultural system, and it is embodied in the reciprocity principle. In Andean worldviews the Ayni or reciprocity principle functions as the link within a society’s cooperation system that ensures the social inclusion of community members and encompasses equality and social fairness (Espinoza 1997; Dávalos 2008). According to Argumedo and Wong (2010), in the Andean agricultural system the Ayni principle is exemplified in the exchange of community work between families. Therefore, the Ayni was not simply a trade-off between families, but encapsulated a set of Indigenous values and beliefs with regard to ethics and human well-being (Belaunde 2001; Lajo 2011; ANDES

2012). As a result, the Andean people succeeded in satisfying the hunger of their people due to the adoption of the Ayni system in their farming practices (ANDES 2012; Espinoza 1997).

In addition, the Indigenous food security model functions as the driver for building resilient food security practices. One example of the development of sustainable agricultural practices can be seen in the Andean peoples. For example, despite the geographical complexities and unpredictable ecological conditions of the Andes, the Andean people developed Indigenous innovation systems such as agricultural irrigation systems and a variety of ecological and agricultural strategies such as the rotation of crops (Bebbinton 2010). Also, the same sustainable food security resilience has played a fundamental role in development of other Indigenous innovation systems. Although this Indigenous innovation system is being subordinated by technological agricultural innovations, they are clear examples of innovative leadership visions coupled with a coherent model of promoting food security.

## Conclusion

This paper discussed the current debate on best approaches to achieve food security with a special focus on the Indigenous philosophies of Sumaq Kawsay and Tē Atānoho and their potential contribution to food security. Although traditional agricultural practices are still practiced worldwide, particularly in developing countries, and such practices provided food security to Indigenous peoples for centuries. Yet, this traditional food production stance is eroded by the widespread of large scale food production approach that involves high scientific methods such as GMO and high-input agricultural technologies such as pesticides (Desmarais 2007; Holt-Giménez and Altieri 2013). Despite these unfolding trends, Indigenous peoples with their Indigenous knowledge embedded in their good living philosophies, offers models for promoting biodiversity, social equity and economic growth without agrochemicals and preserving Mother Earth. The good living philosophies of Sumaq Kawsay and Tē Atānoho provide a case in point.

Thus, this article concludes that these two good living philosophies were not simply an act of sustainability principles between communities, but more importantly the backdrop knowledge of the Māori and Andean people's worldview on sustainability, biodiversity preservation and cultural values. This good living philosophy has enabled Indigenous peoples to develop a harmonious relationship with nature, particularly for the attainment of food security since they depend heavily on ecosystems for their sustenance (Berkes 2003; Carter and Walker 2010). Consequently, food security policies should recognise the potential contribution of Indigenous people's knowledge in safeguarding food security. A guide to developing a sustainable food security policy is proposed in the Indigenous food security model mentioned above. Further, a sustainable food security model can be achieved through the convergence of Indigenous peoples' knowledge, technological innovations, and complemented by the recognition of Indigenous peoples' good living philosophies for more enduring food production systems.

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ISSN 2160-1933

