



INSTITUTIONAL ARRANGEMENTS IN MANAGING AN URBAN FOREST PARK: ARROCEROS FOREST PARK, MANILA, PHILIPPINES

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ABSTRACT – The study problematizes that urban forests parks are significant social spaces for community activities. However, not all urban forests are well managed to function as such. Some urban forests parks are threatened by infrastructure development, land use change, or political priorities of the present governing local government unit. The objective of the study is to illustrate how the local government, non-government organizations (NGO) and advocacy groups collaboratively manage the urban forest park. The study used qualitative methods such as key informant interview, review of secondary data, and field observation to create a holistic picture of the urban forest park in the 5th district of Manila. Coding, categorization of themes and matrices were used as analytical tools. Results show that the Arroceros Forest Park (AFP), a city government property is managed and maintained by a non-government organization in collaboration with the city government of Manila. Moreover, there are other institutions, government agencies and private groups supporting the urban forest park but the latter appears to be neglected, poorly maintained, and viewed as unsafe for public use. Therefore, there is a need to strengthen collaboration among interest groups managing the urban forest park as it is a valuable space in promoting community well-being. The result of the study can be used as an aid to legislation, enhancing awareness on the role of urban forest parks as they provide natural amenities for urban residents to enjoy and appreciate nature in the midst of pollution and congestion.

Keywords: *Arroceros Forest Park (AFP), social space, institutional arrangement, urban forest*

INTRODUCTION

Cities are valuable areas of convergence. They are centers of political, economic, and socio-cultural activities attracting people from all walks of life to study, work, and migrate. They are also engines of opportunity and creativity. In the long run, however, they became congested, polluted, and vulnerable to extreme weather events where people's well-being is at stake.

Aspiring to achieve the concept of "livable" in a city is a vital concern. Globally, cities account for about 70% of CO₂ emissions, which comprise a significant share of global greenhouse gas emissions, the bulk of these being generated in the building and construction, urban transport, and energy sector (UN Human Settlements Programme, 2011). Wheeler (2013) suggests an option and diversity in the variety of amenities available to people who live and work in the community. Aside from bridges, roads and buildings, cities should allocate space for green parks to break the monotony of concrete environment. (Luo et al, (2015). Urban forests parks or wooden lands (Zhang et al., 2007) are important

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components of cities that provide spaces for urban residents, sequester carbon (McPherson, 1998 as cited by Yang, 2005) or reduce heat in the area. "Urban greening" and "urban forestry" are synonymous (Miller, 1997 as cited by Kuchelmeister, 2000) referring to saplings, vegetation and coppice in cities and towns; lawn greenery and farm trees, road and park trees, residual woodlands; and evolving woodlands on unoccupied and neglected land. (Chiesura, 2004; Kuchelmeister, 2000; Tyrvaainen, 2003)

According to Yang et.al. (2005), green spaces can lessen air impurities in dualistic ways: by direct reduction from the air where they attract gaseous impurities like sulphur dioxide, nitrogen dioxide, and ozone that are damaging greenhouse gases. Circuitously, it moderates air temperature through direct sheltering and evapotranspiration (Yang et. al, 2005). Simultaneously, it sequesters carbon dioxide and accumulates it in the structure of woody biomass (Yang et al., 2005). The urban forest offers natural amenities that improve urban life. It likewise provides breathing space for urban dwellers, the luxury of green trees and fresh air. Moreover, the urban forest supports urban biodiversity, enhances outdoor recreation, and at the same time, provides formal and informal education. (Lo & Jim, 2010).

Global studies by the United Nation's Urban Forestry Office (Fleming, 2016) show that urban forest can simmer down the city temperature, especially when located within the highly urbanized areas. Asian countries like India, Malaysia and Thailand formed advocacy groups which aimed to preserve and save urban big trees essential for health development and community ecological building. Similar with highly developed countries, people are more mentally and physically active in areas where urban forest trees are abundant, able to manage their stress and fatigue level. (Koohsari, et al., 2015; Konijnendijk, 2003; Rocas, 2007)

There are also several studies that tackles about the importance and condition of urban forest in Southeast Asia. Henderson (2013) for example said that urban forest are expected "to entertain, educate and improve the health of the population while demonstrating support for sustainable principles and practices" in Singapore. In Bangkok, the government is planning to increase the number of green space make it a more livable city. (Intasen et al, 2016) In Vietnam, there are three departments that help in the development of urban forestry and they even have a national tree day or "Green Saturday". (Ploch, 2012). Michinaka, et al. (2013) figured out that increase in population is one of the important factor which changes the urban forest in Cambodia. Win Tun (2013) on the other hand mentioned that Burmese government has a continuous support in forestry as seen in the government's increasing budget to biodiversity conversion. Webb (2012) mentioned that Kuala Lumpur have 445 ha of natural forest that is being protected by the government. Indonesia also have several actions towards "re-greening" their cities. (Osten et al, 2014)

Major cities in the Philippines, like Baguio City, Cagayan de Oro City, Metro Cebu and Davao City have been critical to various environmental pollution and space congestion (DENR, 2003). The fast dilapidating and declining quality of the environment in these key urban centers aggravates the health conditions of its population. Low awareness on the benefits of urban forestry causes deterioration in urban forest utilization. Institutional constraints like lack of trained government forestry personnel and low level of LGU collaboration prevents full-blast resource utilization. However, the government implementation of numerous people-oriented forestry programs guarantees that forest environment is suitably protected via the execution of punitive to more socially acceptable strategies and approaches (DENR, 2003). In fact, community roles have been highlighted to magnify people's role as forest managers.

The objective of this paper is to determine the roles and rules in managing the Arroceros Forest Park (AFP). This paper anchored on the framework of sustainable urban forest management (Dwyer et al., 2000), that seeks to determine how social actors managing AFP can sustain the remaining urban forest park as a green space in a coastal and highly congested area like Manila.

Sustainable urban forest management is composed of five elements, namely: social context; goals and objectives; means; outcomes and information (Dwyer et al., 2000). Social context refers to the social system collaborating in the management of the urban forest; goals refers to the objective of the social actors in creating the urban forest; means refers to how the urban forest park is being managed and maintained; while outcomes refer to the urban forest structure and use resulting from the management program; information refers to the inventory data and monitoring scheme.

METHODOLOGY

The Study Area

Located in Barangays 659-A in the 5th district of Manila, AFP is located on the rear side of Metropolitan Manila Theater and a stone's throw away from the police station. Though not visible from the main road, AFP is a few meters away from the city university area and commercial mall. It is a gated urban forest park with two gates and a high wall in between.

The AFP (see Figure 1) is accessible to government institutions and commercial areas like the Manila Post Office, City Hall of Manila, SM Commercial Mall, Philippine Normal University, Light Railway Transit Central Terminal, provincial bus terminals, walled City of Intramuros, Technological University of the Philippines, Metropolitan Theater and Unibersidad ng Maynila. However, as an urban forest park, it is not open to the public unlike the green spaces in the old walled city of Intramuros or Luneta Park along the Manila Bay; thus, only government employees from nearby offices and advocacy groups are aware of its existence and importance.



Fig 1. The map of Arroceros Forest Park (inset) located in Barangay 659 – A, District 5, Ermita, Manila created from GIS 03/26/2017

Methods

The study used qualitative approach applying key informant interview using purposive sampling; field observations to fully view the totality of the 2.2 hectare big forest park, aided by photographs, as well as review of written materials provided by the Wild Bird Club of the Philippines, DENR and internet sources. Key informants include volunteers working in AFP, members of Winner Foundation and government employees. It was observed that the 2.2 hectare big space is not for trees and undergrowth alone but sits side by side with the City Department of Education building. The frontal space of the building is used as parking spaces and signages of permitted parking are posted on the trees, which can be mistakenly read as the name of the tree. Analysis of data used coding of transcripts, categorization of significant statements, and matrix presentation of themes.

RESULTS AND DISCUSSIONS

The Arroceros Forest Park (AFP) is being supported and managed by the following agencies in terms of financial support, manpower, monitoring of the tree species, and clearing and cleaning the surroundings. The volunteers of Winner Foundation are directly monitoring the urban forest park while the DENR is monitoring the tree species; on the other hand, Wild Bird Club of the Philippines (Aning, 2003) is overseeing the bird species and migratory birds; while the various private agencies financially support the AFP.

Table 1. Institutional Arrangement in Arroceros Forest Park among the NGO, LGU, DENR and private agencies.

Social Actors	Agency
Winner Foundation Wild Bird Club of the Philippines	Non-government Agencies (NGO)
Department of Public Service	City of Manila, Local government unit (LGU)
Department of Environment and Natural Resources (DENR)	Government Agency
Metro Bank ; Manila Doctors Hospital; University of the East NSTP activity	Private Agencies

Using the five elements of sustainable urban forest management, the study illustrated the management activities in AFP as summarized in Table 2.

Table 2. Elements of Sustainable Urban Forest Management and Institutional Arrangement in Arroceros Forest Park

Elements of Sustainable Urban Forest Management	Institutional Arrangement in Arroceros Forest Park
Social Context	Collaborative activities of the NGO, Academe, government agencies; Volunteers from advocacy groups and academe
Goals and Objectives	Create a recreational park for the City of Manila and enjoy the natural amenities of green space.
Means	The maintenance of AFP is basically volunteerism, donations, advocacy activities from private and government agencies.
Outcomes	The urban forest park is a mixture of indigenous and exotic species, being used by advocacy groups to promote the City of Manila.
Information	The tree species are monitored by the Department of Natural Resources and Environment (DENR). Aside from the DENR, the Winner Foundation through its volunteers monitors the physical conditions of the trees.

1) *Social context.* The management of AFP is a working collaboration between the Winner Foundation, a non-government organization and the City of Manila specifically the Department of Public Services. The Department of Education is also a party to the management of the urban forest, as it is the building sitting side by side with the forest within the 2.2 hectare city government property. However, direct management is being done by Winner Foundation, an organization with limited financial capability to sustain the growing trees and plants in the gated urban forest.

2) *Goals and Objectives.* The land of AFP was bought from the national government by the city government through the joint efforts of Mrs. Amelita Ramos (wife of President Fidel Ramos) and Mayor Alfredo Lim (former mayor of Manila). The pioneering vision for the Arroceros Forest Park was to become a recreational park, providing the people of Manila a place where they can relax and experience the natural amenities of green space.

3) *Means.* Volunteerism from multi sectoral group is the management approach in AFP. There are volunteers from the Department of Education and NGO staff cleaning the vicinity of the park, but their presence is not enough. Based on an interview, the University of the East (Manila) NSTP (National Service and Training) program has been conducting cleaning activities in the forest park. Moreover, there are other institutions and government agencies supporting the forest park aside from advocacy groups, namely: Manila Seedling Bank, the Department of Environment and Natural Resources (DENR), UP Los Banos, Clean and Green Foundation, Araneta University, and Wilfredo Dizon of Philippine Association of Landscape Architects. The forest park is also financially supported by Metro Bank and Manila

Doctor's Hospital. The Winner Foundation, directly managing the AFP estimates that a total of Php 300,000 to Php500,000 (USD 6,659.27 to USD1 11,098.78) a year is needed to sustain the maintenance and monitoring of the park (key informant interview, 2015). To date (2015), the foundation allots Php 20,000 to Php30,000 (USD1 443.95 to USD1 665.93) a month for the maintenance of AFP. (Ancheta, et al, 2016)

4) *Outcomes.* The AFP is a threatened green space as no city ordinance was enacted to protect its stature. Based on interviews, AFP has no direct office affiliation with the city government. It is not under the Recreation Bureau of Manila, nor the Parks Development Office, though there are staff from the Department of Public Service cleaning the area. It is assumed that Winner Foundation as the Office responsible for its maintenance.

Though AFP is located in Barangay 659-A, the activities of the barangay is limited in the cleaning outside the gated forest park since maintenance is not part of the barangay budget. The lack of budget to maintain the façade of the urban forest park attracted street families to converge and make it their resting place. Though the urban forest is stone's throw away from the police station, the street families are not prohibited in using the park's façade area as sleeping quarters creating an impression that it is a highly vulnerable area not safe as promenade for strolling, making it a risky and dangerous ground for the public. Moreover, the façade of the AFP is also used as parking area for both the private and public vehicles.

5) *Information.* The gated forest park is not appealing as a relaxing destination site because it is not even open to the public. Only limited visitors with official purpose are permitted to walk around the forest. Some areas are slippery and dilapidated vehicles are stalled along the walking area; even waste containers are not properly placed. Concrete benches with unsafe physical conditions are not conducive for sitting. However, some trees are properly labelled with scientific names; thus walking around the forest park is significantly educational for academic learning.

The management activities in AFP is basically volunteerism. The Winner Foundation, NGO composed of volunteers are clearing and cleaning the AFP. The volunteers receive meager honorarium from the Foundation but they continue to work in AFP because they have been considered a fixture in AFP.

Another management activity in AFP is collaboration. The waste management facilities, benches, tree and plant species are donated from various private agencies. As a gated urban forest park, it was closed to the public by the Winner Foundation to protect the trees from vandalism and to monitor human movements as petty crime incidents took place inside the park.

Visitors, generally, are restricted but NGOs advocating children activities and social gatherings are permitted inside the urban forest park. With limited visitors, urban people are not aware of its natural amenities where residents and tourists can enjoy the green sceneries, picnic sites, social gathering and relaxing environment. The forest park according to the Department of Environment and Natural Resources (DENR) is basically a community of trees like narra and molave but there are still 1,357 trees in AFP undergrowth not included. Narra and molave trees are hard woods and sturdy trees that can withstand floods and violent weather conditions; aside from the trees, there are various hanging ornamental plants.

To date, the AFP is still elusive from the public eye, unlike the Metropolitan Theater in front of the park that is undergoing renovation; and the gated Mehan Garden, which is a few meters away was already reconstructed. The absence of an affiliated office in the city government is a reflection that AFP

is not a priority project. The local government did not realized that the trees in the 2.2 hectare urban forest park serves as space breather in congested Manila.

CONCLUSION

The function of AFP as a green and social space can be maximized if social actors are well coordinated. An urban forest park provides space, promotes the moral, emotional and physical well-being of the urban residents in a congested city. Henderson (2013) said that urban forest are *mirrors of the societies they serve*. However, the AFP in Manila is not visitor- friendly and unpopular among the Manila residents, students and tourists alike. The city government views AFP as a community of trees, part of the urban landscape to be cleaned, but not as an ecosystem that provides, protects, and prolongs life. There were also no initiative to increase the volume of urban forest in Manila, which is very far from the plans of our counterparts in the Association of Southeast Asian Nations (ASEAN). (Henderson, 2013; Intasen et al, 2016; Ploch, 2012; Michinaka, et al, 2013; Win Tun, 2013; Webb, 2012; Osten et al, 2014)

The collaboration between the primary social actors such as the city of Manila and Winner Foundation are very limited and inexact, with the cooperation moving in isolation and each actor acting separately. Moreover, it has no legal framework to anchor its management activities, as it is not officially affiliated in any park management office. The barangay has little inclination on the importance of AFP as mitigating tool on climate change; and there is an urgent need for evangelization and information, as well as forewarning them of problems that impend their environment.

There is an immediate need to push the local government policy makers on environmental development sustainability, establish a monitoring office accountable for documents and needed actions for the maintenance and management of the AFP. As the Philippines yields towards to a more sustainable community, the authors believe that the country should not only look into the forest in rural areas. Promoting urban forest in the capital city is seen as a must, so that Philippines could be at par with its ASEAN counterparts, who are continuously increasing green spaces in the urban area.

The AFP is actually accessible to universities but students are not fully aware of its existence. As a gated and secluded area from afar, the presence of street families is discouraging for students to appreciate the forest inside the high walls of AFP.

RECOMMENDATIONS

The authors recommend the CLAN concept as the most appropriate management system ensuring functionality of urban forest parks. Management is a shared responsibility thus CLAN stands for collaboration among the local government, academe and the NGOs. It is a triangulation of management efforts to be exercised by the three parties involved.

The barangay, as the lowest level of the local government where the forest park is located, should protect and maintain it since it is within their jurisdiction. It is their own park more than anyone else. The barangay as a whole, must be very vigilant in nurturing the urban forest park hence it should continue to protect their well-being.

The NGO, as an advocacy organization, cannot protect the AFP. The forest park needs to be maintained and monitored. Winner Foundation may possibly leave the area and give up their responsibility since they have to get support from other institutions or provide funds from their own pockets to sustain AFP.

The universities around AFP should contribute in promoting the urban forest park among the students and translate such awareness into community development. The AFP is also identified as an appropriate place for off-campus alternative learning environment, which cuts across natural and social sciences.

There is a need to strengthen collaboration between the local government, academe and non-government organization to sustain the urban forest park. The city government views the urban forest park as part of maintenance cost but not as a natural amenity. The urban forest is a major instrument for biodiversity, academic laboratory that provides moral and emotional well-being of the people. The city government spends for disaster risk reduction and climate change adaptation, but they failed to realize that the urban forest park is a potential climate change mitigation tool sitting in the very heart of the city.

The degree of exchange of information and resources among the three main actors should be utilized. The academe is a significant educational and social-honing institution, which performs roles that bring wider changes in the society. It must inculcate to the youth, as young as they are, the discipline of maintaining a livable city; and let the entire population appreciate the benefits they will reap if they will be able to attain sustainability of the livable components of the place where they live in. Their role then has evolved from teaching and researching to developmental and transformative.

The NGOs must strengthen environmental recognition and involvement in partnership with the community and the local government. There should be interdependence on all sides resulting in the building process of the urban forest. The active involvement of the government, the academe and the NGOs becomes increasingly important in the long term function of the forest park.

Indeed, policy formulation must be legislated for innovative management among the NGOs, academe and local government managers of AFP. Accountability for actions must be established to ensure stronger foundations for the long-term stewardship of urban forests as response to congestion, pollution and rising temperature.

STATEMENT OF AUTHORSHIP

The first author served as an adviser who initiated the concept, identified the framework, helped in formulating recommendations, and provided direction in linking the study towards sustainable development. The other authors identified the study site, did environmental scanning, interfaced with the key informants, conducted the literature research, formulated recommendations, and undertook the writing up.

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