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CAN ACTOR NETWORK THEORY BE USED IN UNDERSTANDING PLANNING PROCESSES?

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Abstract:
Planning systems and practices – including plan preparation and implementation- are often comprise of different actors. The engagement of planning professionals in the planning process is not always static. At all levels, different actors play different roles in the planning process. The design and implementation of any planning process effectively, requires an understanding of the complexity of that process and its related networks. This paper proposes a means of mapping the network of resettlement process and housing delivery system in a selected resettlement scheme, applying the Actor Network Theory (ANT). ANT was introduced by Bruno Latour and Michal Callon in 1990s and it treats equally all human and non-human actors and their relationships in a network. Accordingly, the current research considers legal frameworks, policies, acts and laws as non-human actors within the same network where human actors exist. Utilizing a resettlement community in Anuradhapura as a case study, this research focuses on the flow of information between different actors related to the planning process. Different field based approaches were used to trace such flows of relationships between humans and non-human actors in the resettlement planning process. The application of actor network mapping analysis reveals the influence of different human and non-human actors in shaping and reshaping the planning process in plan preparation and implementation.

Keywords: *Actor Network Theory, Urban Informality, Resettlement, Non-Human Actor, Human Actors*

1. Introduction

Actor Network Theory has been used by different scholars to understand processes of innovation and knowledge-creation where non-human actors dominating subject areas like science, technology, and media. But it was not well experienced in planning practices where most of the non-human actors such as laws and legal procedures play a significant role.

With the failure of the linear model in planning in and around the twentieth century, the planning community developed new models of planning. The need of integrating different voices, across the public and private sectors, in the planning practice was recognized for effective action. Non-recognition of the most deprived and powerless people in the planning process breeds dissatisfaction among people. This thread of discussion has provided a rich vein of understanding on how to rethink the planning process in terms of relationships between people and different acts, laws, amendments and how to manage those relationships collaboratively. Critiques have further deepened the understanding by emphasizing the enduring nature of power relations and conflicts within these networks and the difficulty of achieving predefined-planning objectives. Absence of a strong integrated approach to understand those complex planning procedures made the planning process exist uncovered.

In such a background Actor–Network Theory (ANT) has been considered to be of relevance in understanding the planning practice (Boelens, 2010; Doak and Rydin, 2010.) Such studies pose difficult questions for public policy, particularly in relation to settlement planning. The rapid changes in environment, and. the emerging socio-technical studies makes it more complicated. Thus, planning organizations, authorities and planners within them are grappling with a new range of problems, new technologies and new sets of knowledge (Davoudi and Strange. 2008). Not only the emergence of new technology but also the emergence of different policy documents within planning domains has given an opportunity for ANT to explore on planning problems. ANT seems preferably suited to understand a case in which technological systems and environmental change are major preoccupations. With its emphasis on the lack of any sharp boundary between social and the natural worlds, ANT offers an analytic power over existing planning theories and formal planning practices. The current study explores the usefulness of ANT in understanding complex planning processes by taking a specific resettlement planning process in Mihindupura. The basic concepts and theories explained in the following section will be helpful in understanding the ANT in related to the planning process, where many researchers have slipped off.

2. Literature review

ANT contributes to the planning studies by addressing to the critical question of whether physical materiality and micro actors in a network had any reality or validity in planning practice. It encourages understanding the planning practice as a totality of what may lead to expose new findings in the real ground level planning. In response to this situation, ANT understands the mutual co-existence of the social and material elements identified as ‘actors’. ANT defines an actor as “(a)ny element which bends space around itself, makes

other elements dependent upon itself and translates their will into the language of its own" (Callon and Latour 1981). It is based on three central principles. They are the existence of radical relationship between elements, generalized symmetry (between social and material actors) and the importance of association between these actors as a way of achieving change.

Latour (2005) has clarified that, in terms of ANT, the network is a 'method' not a 'thing' 'out there' to be discovered. ANT is based on understanding the dynamic ways in which relationships between different actors are negotiated. Latour is reluctant to use the metaphor of 'network'. According to him, the word 'network' tends to suggest 'stability' rather than 'flux' (Law, 2009). As Callon (1989) says, 'the actor network should not … be confused with a network linking in some predictable fashion elements that are perfectly well defined and stable, for the entities it is composed of, whether natural or social, could at any moment redefine their identity and mutual relationship.' (p. 93)
According to Murdoch (1998) ANT theorists are interested in how 'socio-material relations are arranged into orders and hierarchies' and how temporarily-stable relationships can deliver an action. Also, according to Callon (1989), network stability does not give the sense of 'perfectly well defined and stable', but rather to consider networks of relationships as either more or less stable, more or less fluid (Murdoch, 1998). As Latour (2004) states, 'Being connected, being interconnected, being heterogeneous, is not enough … really we should say "worknet" instead of "network". It's the work … that should be stressed'

A variety of concepts are used to discuss this work within ANT. For example, 'translation' is one of the key concepts referring to the ways in which network is negotiated. This focus on the tentative and temporary arrangement of relationships may help explain the frequent difficulties by which models of urban development are translated into different environments (Tait and Jenson, 2007). Thus, ANT unpacks the concept of translation into stages of problematization, interessement, enrolment, mobilization and stabilization.

Problematization is when actors identify that there is a need to change relationships within the network. This is usually defined by a human, because humans can communicate a meaning in a way that a non-human cannot, but a non-human often encourages the problematization. For example, this research uses the problematization of resettlement planning. While the problematization is articulated by professional planners, a human, and it is directly related to housing, a non-human. Meanwhile, actors are required to come together around the dominant framing and then engage in specific negotiations within the context of such framing. Such negotiations will end up in arranging all the

other actors in a way, the focal actor wants, other actors to be; where focal actors is considered as the dominator of the network. Accordingly, with all the actors that are in an 'interessement' with the focal actor create a stabilized network. Callon (1985) defines 'interessement' as a group of actions by which an entity attempts to impose and stabilize the identity of other actors through its problematization'. For instance according to Callon's study, legal documents and rules and regulations creators in a country expect other actors to 'play a role' ; authorities to support/empower the rules and regulations, politicians to legalize them in the parliament, inhabitants to follow the rules, opponents to revise their arguments etc. The stage that generally comes next is enrolment, where actors are made to accept and perform certain roles. 'Interessement achieves enrolment if it is successful'. In this stage Callon describes how an actor will try to form alliances through 'negotiations, trials and tricks' and the obstacles the actor faces in this process. By enrolling allies, actors can mobilize the resources to sustain their preferred network. Enrolling is a particularly interesting process by which actors constitute other actors in their own agency. Relationships between actors are further defined by intermediaries passing between them (Callon, 1991). Mobilization, the fourth stage of translation maintains commitment to the problematized cause of action. Mobilization can be seen as a test given to the actors to see whether other actors are "true to their words or not". This condition is also applies to the non-human actors as well. When the alliance of the actors in a network is successful, the network can lead to a temporary stabilization. But throughout the process of translation there is the risk of failure or halt at any stage described above. But the translation of the interests of diverse actors, along with their enrollment into stable networks, requires continual chains of translation.

According to Callon (2009) these processes, and their complexities, assumptions and uncertainties, are often hidden within 'black boxes'. Black box is a metaphor that is used in ANT to represent a complex category. According to the ANT, a set of complex actions can be represented by a 'box', since it is generally regular and stable in its functions (Wiener, 1948). Such black-boxes resist the opening up of cumulative processes to a proper negotiation. Rather, such black boxes create areas within networks where relationships between actors are 'taken for granted and unchallenged'. City wide proposals for resettlement planning integrating systems of acquisition, compensation, plan preparation and implementation reveal a tendency to over simplify the complex context of housing delivery in a resettlement planning process. According to Jacobs (2006) traditional geographies have 'black-boxed' the building as an immutable artifact: "they do not integrate the socio-technical processes by which that there-ness materializes: the process of construction and use of the building, the various modes of authorship and

ownership, the day-to-day complexities of maintenance and servicing." (p.11) In this context, understanding housing delivery process in a resettlement planning process is a timely need. Further, to elaborate it can be considered as Latour's example of a dance to describe the importance of understanding the translation process in fixed black boxes. Accordingly, when the movement stops, the dance ends but, of course, the actors have been changed, and this is the fundamental scenario that can happen in the planning practice too. Further, Doak and Karadimitriou (2007) characterize the urban (re)development as fluid assemblages, 'as heterogeneous collectivities of people and things, relationally tied to each other over time and space' (p. 221). This research explores the applicability of ANT into a resettlement planning process implemented about 30 years ago.

3. Methodology

3.1. CASE STUDY: RESETTLED COMMUNITY IN MHINDUPURA, ANURADHAPURA, SRI LANKA

Mihindupura, Anuradhapura, Sri Lanka- located 2 km from the present Anuradhapura new town and located between two rivers, Malwathu oya and Halpan ela- is a place where resettled community lived in for the last 25 years this resettlement project was carried out in 1988, under the Anuradhapura scared area plan, when part of the town then was declared as the sacred area to maintain the religious environment in Anuradhapura. Earlier (till 1988), the selected communities in Mihindupura (165 families), were living in Kurunegala junction, Anuradhapura which is 3 km away from the present location. During the resettlement project, people in Kurunegala junction were given three location options –Katukeliyawa, Dewanampiyatissapura and Mihindupura. Out of these three sites Mihindapura was the most preferred site by the people at that time and therefore, Mihindapura was selected for the current study

3.2. METHODS OF DATA COLLECTION AND ANALYSIS

This study follows a qualitative approach, but attempts to analyze the data using network theories. Main data collection methods were archival documentary search, field observations, photography survey, semi structured interviews and focus group discussions. The secondary data was collected from the National Physical Planning Department (NPPD) (Earlier known as the Department of Town & Country Planning), Sri Lanka, Anuradhapura Municipal Council (AMC) (In 1980s, it was an Urban Council) and Wessagiriya Grama Niladhari (GN) (Village administration Division) of Anuradhapura. The archival documentary search was carried out to understand the context and procedures, to review legal provisions and to look for written evidences about the program. Semi structured interviews and focus group

discussions were done with the community in Mihindupura and officials from project planning and implementing authorities by then and now people/officials who have a rich understanding on the Anuradhapura Preservation Scheme. The analysis was done by considering two time laps, 1980 to 1990 and 1990 to 2015. During the field study, two questions were asked from the interviewees.- Q1.What are the processes and experiences you went through in moving from Anuradhapura old town to Mihindupura?' (First question refer to the duration I from 1980 to 1990 representing the period where decisions, rules and regulations related to Mihindupura resettlement were taken). Q2. -What are the present experience of the community in Mihindupura?' (Second question refer to the duration II from 1990 to 2015 representing the post resettlement period) Through these questions, by interviewing different groups of people, a complex range of more than 20 human and non-human actors were identified.

4. Results

The resettlement process of Mihindupura, has started with the relocating of people from the Anuradhapura Scared Area boundary to the outer city. With that the key intention of the policy makers was achieved as all the commercial activities were shifted from the immediate vicinity of the Anuradhapura Scared area. Palmer (2014) states that this kind of process consists of with several micro steps and actors, overwhelmed by macro steps but mostly doesn't represent since they are hidden in a stable 'black-box'. According to Callon & Latour (1981, p.299) a macro-actor is by definition no more difficult to examine than a micro-actor. But a macro-actor can be a micro-actor seated on black boxes, a force capable of associating so many other forces that it acts like a 'single man'. According to them, growth of a network is only possible if one can associate long lasting forces and simply existing with them. Hence a macro-actor is at least as simple as a micro-actor since otherwise it couldn't have become bigger. But by tracing actually functioning worknets and asking the aforesaid two questions, the interest is to open the 'black-box' and identify the micro actors hidden beside the macro-actors: to visualize the resettlement process in detail.

4.1 ANT MAPPING INSIDE THE 'BLACK BOX'

To commence a tracing of the flow of resettlement planning process starts by opening the black boxes available. The networks were established employing the ANT definition of an actor as "any element which bends space around itself, makes other elements dependent upon itself and translates their will into the language of its own" (Callon and Latour 1981 p. 286). The information gathered under the two main questions were compiled and brought into one diagram in order to visualize the actors that emerged in different planning stages.

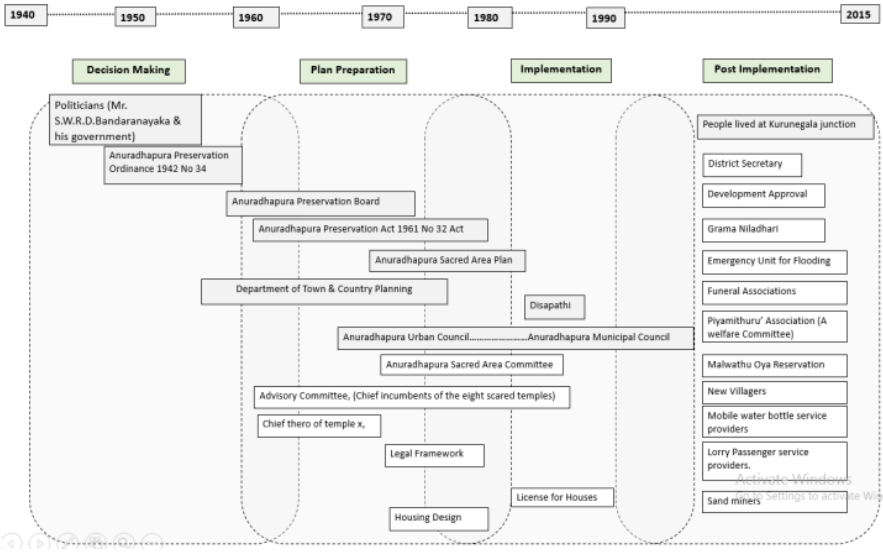

Figure 2, Opened 'Black Box' -Resettlement Planning Process for Mihindupura Resettlement Scheme (Source: Compiled by the authors)

As highlighted, the research refers to all the actors attached to the worknet at the real ground. By, opening the black box two interesting findings could be observed in the worknet in Mihindupura resettlement scheme. Initial observation is the existence of informal actors within the formal planning process of Mihindupura resettlement such as chief incumbents of the eight sacred temples. The second observation is that, during the post implementation period there is an increase in the number of actors such as different community based associations who are supposed to influence the formal planning process. Overall, these identified actors outweigh the actors who have emerged away from the formal planning process. The non-human actors such as policy documents including rules and regulations enhance the complexity of the functional worknet of Mihindupura resettlement scheme. Apparently, the opened black box is not as simple as what is in the documents. This complexity can be further elaborated employing the five stages of translation process, as interpreted in the ANT. According to the concept of translation of ANT, the politicians (Mr. S.W.R.D Bandaranayake and his government) has started the process of problematization, emphasizing the need of keeping Anuradhapura Sacred Area separately from a busy environment."…Anuradhapura town was located around Sri Maha Bodhiya (Sacred tree)..by 1940s the ancient ruins were not preserved and they are out of the eyes of the rulers… fish, vegetable stalls and other trading activities around Ruwanweli Maha Seya (Stupa) make

the devotees depressed…". (Anuradhapura preservation scheme report, 1996, p.5)

In order to achieve the aforesaid problematization, the group of politicians including Mr. S.W.R.D. Bandaranayake had attempted to impose and stabilize the identity of other actors, by introducing legal documents such as Anuradhapura Preservation Ordinance No.34 of 1942, Anuradhapura Preservation Board Act No 32 of 1961, Legal Framework for Mihindupura etc. As Callon, states such rules and regulation creators in a country expect other actors to 'play a (particular) role'. After introducing this process the group of people who have an interest, enrolled in a network to achieve their target make their interest a success. According to the information provided by the 'black box' the planning decision making process for Mihindupura resettlement scheme was initiated in 1940s. In order to achieve this identified problematization, established by the Bandaranayake government at that time, the 'group of interest' establish the Anuradhapura Preservation Board to implement the designed Sacred Area plan for Anuradhapura. But at the stage of enrollment the 'group of interest' found that the commitment to the problematization caused by assigned groups of interest such as Anuradhapura Preservation Board are not 'true to their words'. But if Anuradhapura Preservation Board was successful, it can be considered as a position where the network move to a temporary stabilization. Instead, after enrollment of the actors in interest the network emphasized the need of re-shaping the network by mobilizing the alliance of actors. In this case, the Preservation Committee was disbanded and a new committees called Anuradhapura Scared Area Committee and an Advisory Committee consisting of chief incumbents of the eight scared temples of Anuradhapura, was established. The process of translation come came to a halt and started to implement the plans of resettlement by 1980s. Therefore with the support of many other actors such as Department of Town and Country Planning (Present National Physical Planning Department), Disapathi (GA), Anuradhapura Urban Council (AUC) the plan came into operation in terms of resettlement programmes. According to the translation process explained in the theory of ANT, this situation can be identified as an example for a stage where a temporary stabilization happen in the process of resettlement planning.

As per the information gathered through surveys for the aforesaid two questions, the process of resettlement extends over years following the process of translation mentioned in the ANT. But ANT does not explain "why" or "how" a network takes the form that it does. Thus, further to elaborate the resettlement process of Mihindupura the research employs the Social Network Analysis (SNA) to define the roles played by different actors in the traced map

of translation from 1940s to 1980s. Such roles of an actor can vary from a focal actor who dominates the entire network, to an actor who plays the role of a gatekeeper in negotiating things between two or more actors. Degree and Betweeness measures are employed to identify the characters of the actors of the traced network and also to find whether the actor is focal or not. In degree of a network represents the number of incoming edges into a node. Out-degree of a network refers to a number of outgoing edges originating from a node. When this in-out composite value is taken, it calculates the total connection of a node. For example, this gives how many connections (ties) a particular actor in the network, is having with other actors in the same network. Accordingly, the focal actor of a network has the highest degree value and represents the dominator of the network. It aligns other actors to make the interest of the focal actor to be realistic. In this study, in and out degrees were studied separately, while only the composite degree diagrams are presented in the paper.

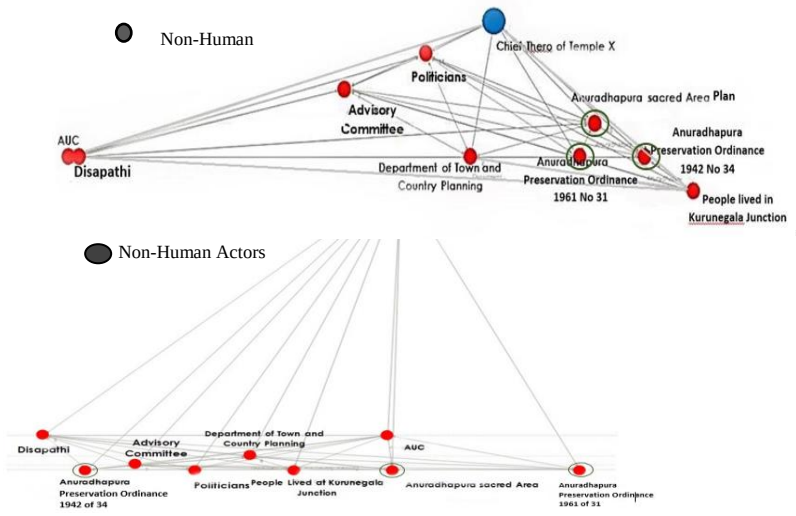

Figure 3, Degree (In and Out) Centrality (1980-1990)
(Source: Compiled by the authors using UCINET software)

Betweeness of a network identify the mediator of the network. Mediator plays the role of a gatekeeper in a network. Obligatory Passage Point (OPP) referred to a situation that has to occur for all the actors to be able to achieve their interests as defined by the focal actor.Accordingly, in the above diagram, Thero has the highest number of ties towards and outwards. But he was not within the

formal planning process by that time. Instead, he has relationships with all the other actors in the network. From the people who lived in Kurunegala Junction to Politicians, Thero has a well spread network. The ties in between the chief incumbent and the other actors do not represent the existence of formal relationships. Thus, the findings of the ANT expose the existence of actors who are not in the formal planning process and most importantly such actors play the role of the focal actor with the highest connections among all the actors. For instance being an actor in the formal planning process, Disapathi (Government Agent) had only five direct connections (ties). But the Thero who is not within the formal planning process has eight direct connections (ties). Thus, the Thero has become the FA of the network. Further he was in the middle of most of the networks. Eventually, the identified relocation sites were Mihindupura (Shanthi Villages), Dewanampiyatissapura (Shanthi Villages) and Puranagammana Villages. From these three locations people were given the opportunity to select the preferred place. In providing houses the Committee provided them a design with one living room and two bedrooms. In addition they were given with Rs. 25,000 as a motivational grant by the Ministry of Housing Development Authority. After completion of the project the Sacred Area Committee handed over the responsibility of this scheme to Anuradhapura Urban Council.

Although the resettlement planning process proceeded smoothly, according to the process of translation it could have failed or halted at any of the stages described above. The information in the 'opened black box', from 1940s to 1980s reveals that the planning process continues, providing examples for the translation concept of Callon and Latour. After the establishment of the Anuradhapura Preservation Board and preparation of the Anuradhapura Sacred Area Plan the process halted for a period. But it is a temporary stabilization and continued from 1980s by creating a new problematization. With these observations, it was identified that the group of interest such as Anuradhapura Preservation Board are not 'true to their words'. According to Callon, in such a situation a mobilization in the same network can happen to reform the network to meet the interests. That's how the Anuradhapura Scared Area Committee was established.

Afterwards, with the corporation of Ministries of Policy Planning, Housing and Construction and Highways, the Department of Town & Country Planning accelerated the process of resettlement programme under the Scared Area Plan. Providing examples for the failures in linear planning models at the stage of post implementation, new actors emerged when it came to the post implementation period. With the emergence of such human actors, the roles played by both human and non-human actors changed in the stage II.

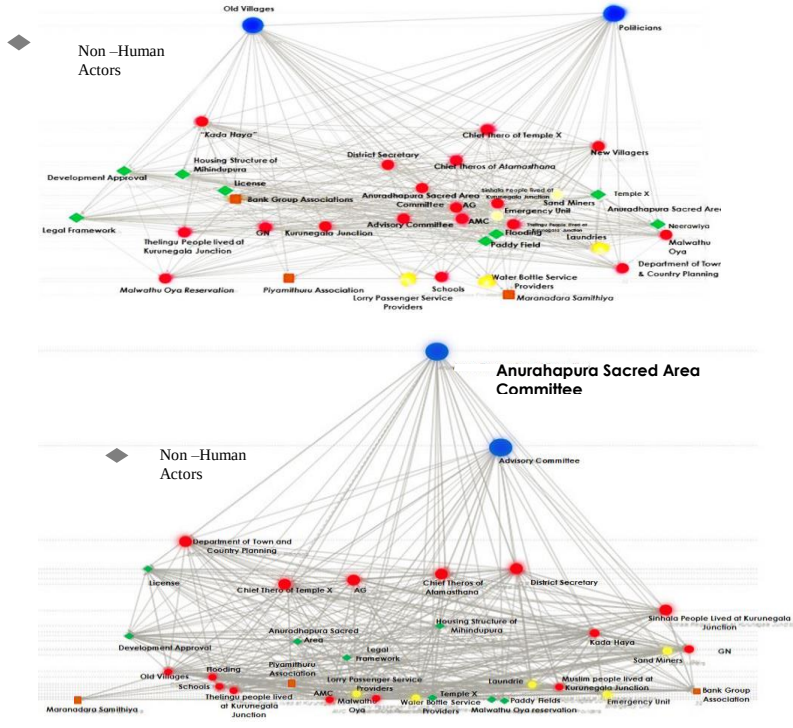

Figure 4, Degree (In and Out) Centrality (1990-2015)
(*Source: Compiled by the authors using UCINET software)*

Above diagrams it reveals that the focal actor has changed into old villagers who were resettled from Kurunegala junction few years a back has become the focal actor. These actors were the Obligatory Passage Points in the duration I who were called as 'people lived in Kurunegala' in the first diagram. This can be related to the local political ties that they developed during the last 25 years. Accordingly, people and politicians who represent the village, have the highest interaction level with all the actors in the network. The old villagers (community who were resettled from Annuradhapura) and the politicians of the area have developed direct connections with new villagers who have moved recently to Mihindupura, District Secretary, Grama Niladhari, and Group Associations. Like the human actors, the non-human actors such as license, housing design for the resettlement schemes, development approvals have become the intermediaries of the network by obtaining the highest values of betweeness. Most of the non-human actors in the network play an intermediary role. According to Rydin (2012), to understand how the networks are formed, negotiated and potentially stabilized, it is necessary to consider how these

actors operate in relation to each other, how they enroll each other into the network and the role that intermediaries play in bringing actors together and defining their relationships. Thus, the research exposes two important aspects of planning. Initially it emphasize the failure in applying linear formal planning models and processes in planning practice. The research also reveals how planning policy documents are important in mediating and defining the ties among different actors engaged in plan making and implementation.

5. Discussion and Conclusion

Although no firm definition is bought up, the major argument of this paper based on ANT emphasize that the planning process cannot be pre-determined and it is always supported by a process of translation and thereby the findings of the current research support work of Murdoch (1998) and Latour (2004). Initiating from the stage of problematization, the planning process extends through enrolling the actors who are in interest to solve the problem. Also the focal actor mobilizes the other actors who are not true to the words on the way to stabilization of the worknet. This process discovers the instable and the dynamic nature of the planning worknets, since they keep on changing. ANT discovers the process of planning in terms of its five key stages. More or less in many contexts policy documents are used to safeguard the formal planning process, pre-defined by some of the expertise. The policy documents are not to fix the people to a pre-defined set of rules. Further, the research employs SNA and centrality measures to understand the findings of the research. The interpretation of ANT does not express a strict process to understand complex planning processes. The current study findings have shown planning processes can be better understood when ANT incorporates Social Network Analysis. This is an interesting finding. Infact, it could be elevated to being one of, if not the key contribution, that this research makes. As per the findings of the analysis intermediaries plays the role of gatekeepers. According to the concept of betweeness, the actors who are playing intermediary roles are often qualified with negotiations and translations. Thus, the research highlights the necessity of understanding policy documents with possible amendments and up-to-date changes in order to meet the aspirations of the people (Doak and Karadimitriou, 2007). If not, people themselves negotiate the provisions in the acts and laws to make their lives comfortable as happened at Mihindupura.

Throughout the process of planning, laws and regulations are at the zenith and any activity against the law is called as ‘illegal’. But the ANT findings reveal that laws and regulations are not the most prominent focal actors in the planning process, instead they are negotiators. To our knowledge this has not been discussed in previous literature and therefore, this finding can be recognized as a key contribution to our knowledge of understanding complex

planning processes. Building on this point, the planning process should not be driven by the laws and regulations, but by the actors who need to recognize other actors and believe in them. Therefore, the research exposes the disjuncture between the uses of law with its actual role Mihindupura community is trying to make themselves comfortable by negotiating the given rules; and using their relationships and associations using personal contacts as the key mode of communication. Application of ANT for Mihindupura reveals that the planned resettlement is driven not only by the plans and regulations but also through the actors away from the legal procedures. Thus, it is necessary to understand the role of planning policy documents in a worknet rather than trying to switch all the actors into a predefined network through policy documents including acts, laws and legal frameworks. Thus, planning process cannot be understood as a fixed process, which delivers fixed outcomes.

In previous studies that have examined actor networks have failed to analyse the role of non-human actors in a planning process where human actors interact and active. It is commonly believed that the legal documents are the bases of the planning procedures when it comes to practice. The findings of the research, however, establishes an argument that legal documents are always the negotiator in a network where human actors move and function. Thus, rather analysing the planning procedures along with social network analysis or ANT, combination of both the theories will deliver a more comprehensive and accurate responses. Understanding planning process is not simple and it has no clear-cut paths and edges. The collaborative approach of using theories and analysis together helps to produce a more holistic picture of planning process in a particular context forgiving the limitations of ANT.

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