

Impact of Government Tranche Deadline in Housing Reconstruction: A Case Study of Nepal

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Abstract

Even after two years of devastating earthquake, the average 2nd tranche distribution of 11 mostly affected districts was just 0.7% of the total identified beneficiaries. National Reconstruction Authority came up with the approach of applying tranche deadline in the housing reconstruction in July 2017. **This paper describes the effectiveness of government tranche deadline to increase the speed of reconstruction and the impacts of deadline through descriptive method using the data of CLPIU-GMaLI and EHRP.** It was found that the government tranche deadline accelerated the number of the reconstructed houses in the affected areas. However, some minimal impact was identified in the preference of one room houses and houses with smaller plinth area. It is recommended that the government tranche deadline must be used for the beneficiaries for accelerating reconstruction progress but a critical policy level intervention is required to overcome the minimal effects of announcement of deadline.

Keywords: Housing Reconstruction, Government Tranche Deadline, Owner Driven Reconstruction

1. Introduction

On 25th April 2015, an earthquake of M 7.6 occurred with epicenter about 80 km northwest of the capital city of Kathmandu followed by the aftershocks (NSC, 2015.) damaging almost a million houses (UNDP, 2019). Housing is usually the most valuable asset for people in rural areas of Nepal (Ahmed, 2011). After a disaster where a huge volume of houses has to be built as quickly as possible, it would present enormous challenges and would be highly demanding for agencies to build housing catering to individual beneficiary needs (Ahmed, 2011). However, Vahanvati and Mullingan (2017) presents the flexibility of time frame is required for reconstruction through allocation of more time in planning phase, time for gaining the trust of people and also for the completion of housing reconstruction phase. Reconstruction of permanent residence is a continuous process that always needs decades of efforts to return a community to normality (Sadiqi et al., 2012). It takes a substantially longer period to come up with the consolidated housing reconstruction program to cover all the requirements (Steinberg, 2007). After a disaster, shelter must not be considered as objects only like tents or buildings but should be recognized as a series of activities to achieve various needs like physical and psychological health, security, privacy, dignity and livelihood support (Kennedy et al., 2008).

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The Government of Nepal expected the entire housing reconstruction process to take up to five years (NPC, 2015b). Owner driven reconstruction approach was adopted for housing reconstruction of the affected areas after the Gorkha Earthquake, 2015 making home owners responsible for construction of their house (NPC, 2015a). Owner driven approach of reconstruction was found to be quicker than donor driven approach as communities have stronger sense of ownership and incentive to rebuild houses within shorter time frames (Andrew et al., 2013; Lyons, 2009). The Government of Nepal supported NPR 300,000 to the home owners based on three tranches of grant assistance. A beneficiary was eligible to receive first tranche (NPR 50,000) after the participation agreement while second tranche (NPR 150,000) and third tranche (NPR 100,000) were distributed only after technical verification when reconstruction has reached plinth level and roof band level respectively to ensure Build Back Better (NRA, 2015). The policy of government’s housing reconstruction grant created a huge opportunity to leverage safer housing. National Reconstruction Authority (NRA) started distribution of first tranche from March, 2016 (NRA MIS, 2020).

It was expected that once the first tranche was provided to the beneficiaries, the reconstruction will start. The reconstruction speed was not as expected as the underlying implications of disaster for longer term reconstruction are not fully understood by policy-makers and recovery practitioners (Chang et al., 2010). After 2 years of earthquake NRA believed that, beneficiaries were not motivated to start construction of their house, as there is no deadline to complete reconstruction, resulting in only fewer number of start in reconstruction compared to participation agreement. NRA wanted to set the fiscal year 2017/18 as year of the reconstruction and introduced tranche deadline in July 2017 for beneficiaries to collect entire tranche by mid July 2018 (NRA, 2017b). The government tranche deadline has been revised 7 times with the latest revision coming on 10th March, 2020 aiming to distribute all tranches by 15th December 2020 (NRA, 2020).



Figure 1 Government Tranche Deadline Timeline

The owner driven housing reconstruction project supporting construction of over 100,000 houses in Bihar was extended twice (by 4 years) by the funding organization (the world bank) due to several implementation delays (IEG Review Team, 2019). The people were satisfied with participatory approach of reconstruction but felt that allocated time wasn't enough to complete houses (Vahanvati & Mulligan, 2017). Steinberg (2007) states that compromises will be taken on essential constituents of reconstruction to complete it within the timeframe and suggests that longer time period will be required for holistic reconstruction approach which will make people main agents of development. One of the reason for home owners to construct smaller houses insufficient to their needs is the government tranche deadline (CFP, 2018). This paper aims to identify the effectiveness of government tranche deadline to increase the speed of reconstruction and other impacts of deadline.

2. Methodology

The study has been conducted with the data of 11 out of 14 most earthquake affected districts of Nepal (NPC, 2015a). The 11 districts include Dhading, Nuwakot, Makwanpur, Sindhuli, Sindhupalchok, Gorkha, Dolakha, Ramechhap, Rasuwa, Okhaldhunga and Kavrepalanchok. As the paper only considers the study for housing reconstruction in rural area, the data of 3 mostly affected districts (Kathmandu, Bhaktapur and Lalitpur) were not considered. In addition, the government tranche deadline for these Kathmandu Valley districts were different than the 11 districts (NRA, 2016). So it has been assumed that the impact of government tranche deadline in 3 districts might affect the analysis of 11 districts.

NRA announced the deadline for Participation Agreement (PA) Signing and receiving of tranches in the different level. As receiving tranche was related to the physical accomplishment of PA signing and construction at different levels. In this paper, the data analysis has been done for conditions for which the announcement of deadline has been done. These data were taken from the official website of Central Level Project Implementation Unit –Grant Management and Local Infrastructure (CLPIU-GMaLI) for different period of time from March 2017 to March 2020 as of end of each month (GMaLI, 2020.). The data before March 2017 is not available with GMaLI. To check the monthly increase, the data as of previous month was deducted from the data of next month.

The initial study of the progress because of deadline was focussed on PA signing and first tranche. However, the result showed when the government tranche deadline was announced, PA signing and first tranche already reached to 89.6% which is considered as a success by NRA (Diplomat, 2018). As NRA also shared that the tranche deadline was announced to motivate beneficiaries to rebuild faster (Times, 2019), the data of second tranche and third tranche was only considered for further analysis because receiving of tranche was related directly to the construction up to plinth and roof band level.

After checking the pattern of the reconstruction, to check the impact of government tranche deadline in different sectors, data from Emergency Housing Reconstruction Project (EHRP) was analysed. EHRP database consists of the data regarding the number of the houses constructed in different date, before and after government tranche deadline. The EHRP database has been prepared with the combined efforts of mobile masons, engineers and social mobilizers and updated every biweekly. Interview was done with head of household or the beneficiary who is available during the visit. As of March 2020, this database covers 95,117 beneficiaries in a total of 109 wards (91 in Sindhupalchok and 18 in Gorkha). For this research we will be focusing only on few parts of this database, especially the construction information like construction date, no of one room houses, typologies and plinth area of the houses with respect to the deadline that was announced by NRA.

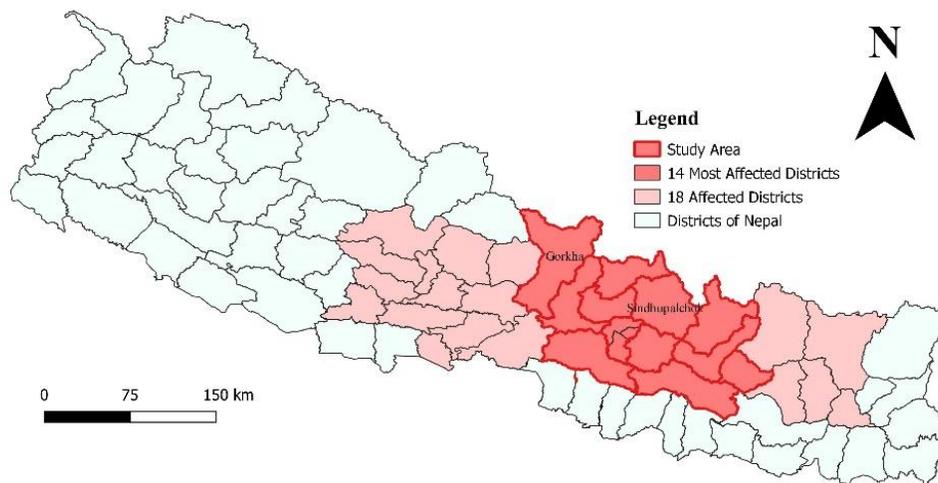


Figure 2 Study Area and Other Earthquake Affected Districts (NPC, 2015a; Survey Department, 2020.)

As the beneficiary will decide the no of room of house, size and type before receiving second tranche, physical accomplishment was related to more towards second tranche than third tranche. Hence, the impact of government tranche deadline was compared for second tranche only.

The research is conducted on the basis of descriptive analysis. Trend Analysis has been done to check the progress in different time period in monthly basis. For the study of 14 districts, 618,734 total data were taken for initial analysis to check the trend in monthly basis.

Similarly, for second level of analysis, following data samples were used to analyse the database to compare, timing of start of construction, preference of one room house, selection of plinth area and structure typologies and loan and interest status.

Analysis Elements	Data Samples
Start of Construction	87,543
One Room	79,380
Plinth Area	87,161
Structure Types	85,948
Loan and Interest Rate	79,689

The plinth area was divided into 5 different ranges based on the plinth areas of the designed buildings of Design Catalogue developed by Department of Urban Development and Building Construction (DUDBC, 2015). The five ranges are,

- 1) Less than 200 square feet
- 2) In between 200 square feet and 360 square feet
- 3) In between 360 square feet and 560 square feet
- 4) In between 560 square feet and 1000 square feet
- 5) More than 1000 square feet

Similar comparison was done for the preference of the typologies of the construction. The type of houses used in the study is same as provided by the Ministry of Urban Development (DUDBC, 2015, 2017; NRA, 2017a). The houses may be- i) SMM: Stone Masonry with Mud Mortar, ii) BMM- Brick Masonry with Mud Mortar, iii) SMC- Stone Masonry with Cement Mortar, iv) BMC - Brick Masonry with Cement Mortar, v) RCC – Reinforced Cement Concrete, vi) Hybrid – is a type of house that use two different techniques i.e. stone and brick, stone and wood etc., vii) Light frame steel structure, viii) Light frame timber structure and ix) Others – it includes other type of buildings which doesn't fall in above mentioned categories.

As the initial result suggests, highest month receiving second tranche was after 9 months, i.e. at the month of March 2018, of the announcement of government tranche deadline. Hence, the data was done for 45 months data, divided into 5 different durations, i.e. January 2016 to September 2016, October 2016 to June 2017, July 2017 to March 2018, April 2018 to December 2018 and January 2019 to September 2019, which covers two durations of 9 months before tranche deadline was announced and 3 duration of 9 months after the tranche deadline was announced.

3. Results

3.1 Overall timeline of Participation Agreement (PA) Signing and 1st Tranche

Figure 3 shows, as of March 2017, 4 months before the tranche deadline was announced the percentage of PA Signing was 91.3 % among the 532,236 beneficiaries. On the month of June 2017, the number of the beneficiaries increased by 16,585, while there was participation agreement

of only 540 beneficiaries and the relative percentage of PA sign decreased from 92.4% to 89.7%. Similar situation happened on the month of November 2017, June, July and November 2018. The percentage of PA signing is followed by the percentage of 1st tranche. As of end of March 2020, the percentage of the 618,734 beneficiaries in 11 districts 95.1%.

As of March 2017, 0.7% of the total 532,236 beneficiaries received 2nd Tranche. Comparing the percentage of people receiving second tranche with deadline (figure 1), the result shows, the percentage of beneficiaries receiving 2nd Tranche starts rising from the month of July 2017 and reaches to 9.8% after 4 months. As of end of November 2017, the percentage is 16.0% and then it goes up to 21.4% in December, 28.0% in January 2018, 56.2% in April 2018, and 70.4% as of end of July 2018, 76.4% in Jan 2019, 84.2% in November 2019. By the end of March 2020 the percentage is 85.8%.

As of March 2017, 0.1% of the total 532,236 beneficiaries received 3rd Tranche. Comparing the percentage of people receiving second tranche with deadline (figure 1), the result shows, the percentage of beneficiaries receiving 3rd tranche is 0.6% as of end of August 2018, 8.4% as of end of March 2018, 30.6% as of end of June 2018, 35.0% by July 2018, 54.1% by January 2019, 63.5% by June 2019 and 74.0% by February 2020. By the end of March 2020, the percentage is 74.7%.

3.2 Monthly Increment of 2nd Tranche:

Figure 4 shows on the month of July 2017, 20,405 beneficiaries received 2nd Tranche. Similarly, 37,551 on January 2018, 61,419 on March 2018, 50,073 on April 2018, 23,618 on July 2018, 5,442 on January 2019, 9,271 on June 2019 and 4,056 on November 2019 received 2nd tranche. The monthly data has been acquired since April 2017. This shows the increment in number of people receiving second tranche from the month of April 2017 to July 2017. Similar trend of increase in per month data starts from December and it reaches the highest among the months in March 2018. The next trend is immediately after March 2018, where there is a decrease in every monthly data but still is the maximum in compared to the data after August 2018. The data of January 2019, shows a bigger increase than the data of December 2018 and similar is with the data of June 2019 and November 2019.

3.3 Monthly Increment of 3rd Tranche:

Figure 5 demonstrates, 59,485 beneficiaries received 3rd tranche as of June 2018, 32,033 received as of July 2018. Similarly, 8,663 on May 2019, 18,509 on June 2019 and 6,627 on Feb 2020 received third tranche. The increasing monthly trend is seen from the December 2017, where monthly data is decreasing towards February 2019 and starts rising again from March 2019 and reaches the highest at June 2018, a month just before the month of government tranche deadline, July 2018. This trend is seen decreasing per month from July 2018 to December 2018 and again is higher in the month of January 2019 and February 2019. This number is increased at the month of April 2019 and decreased at May 2019 and increased again on June 2019. On Feb 2020, the data is increased in compared to the month of January 2020.

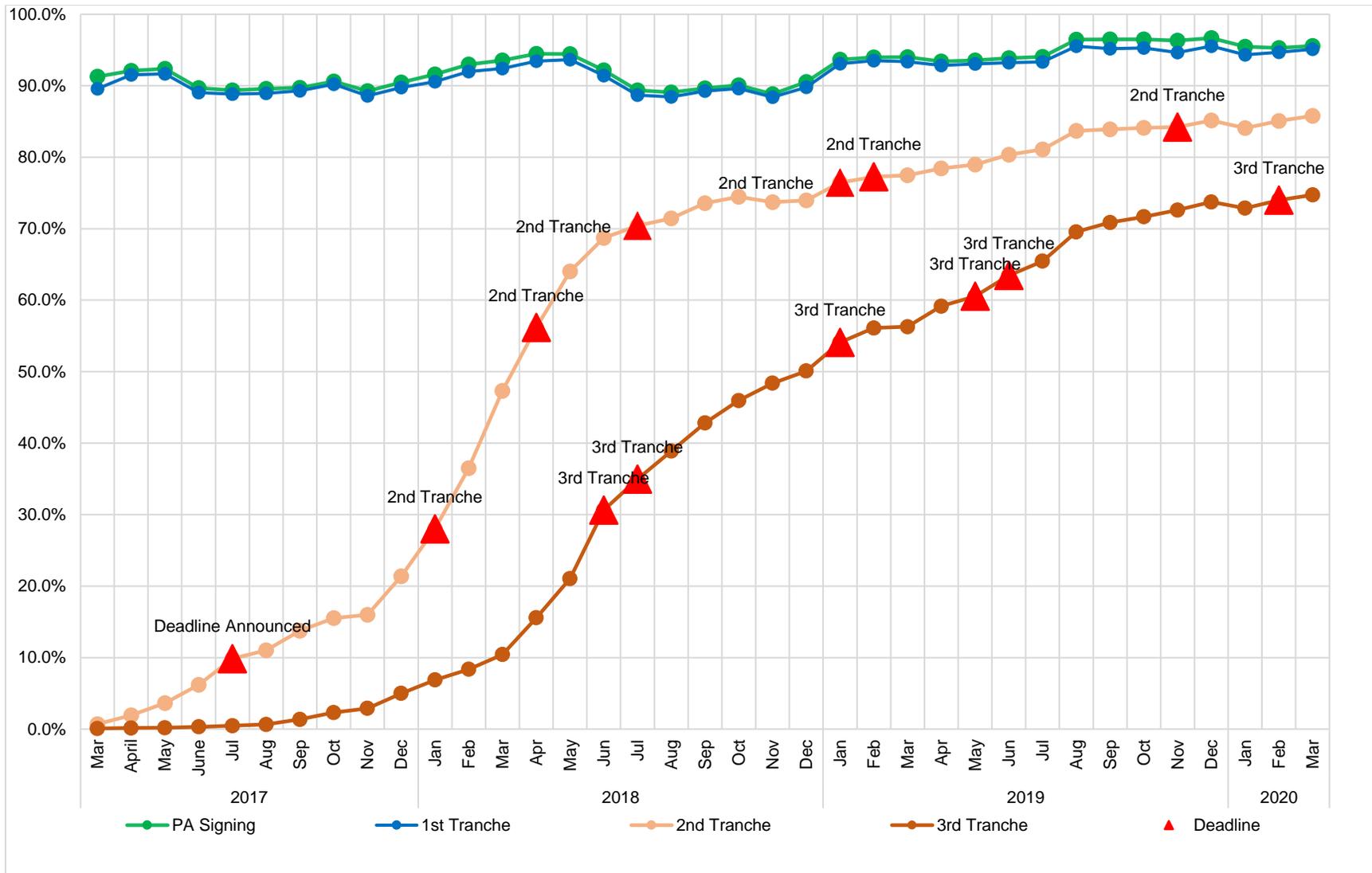


Figure 3: Timeline Status for PA Signing, 1st, 2nd and 3rd Tranche Distribution in 11 Districts

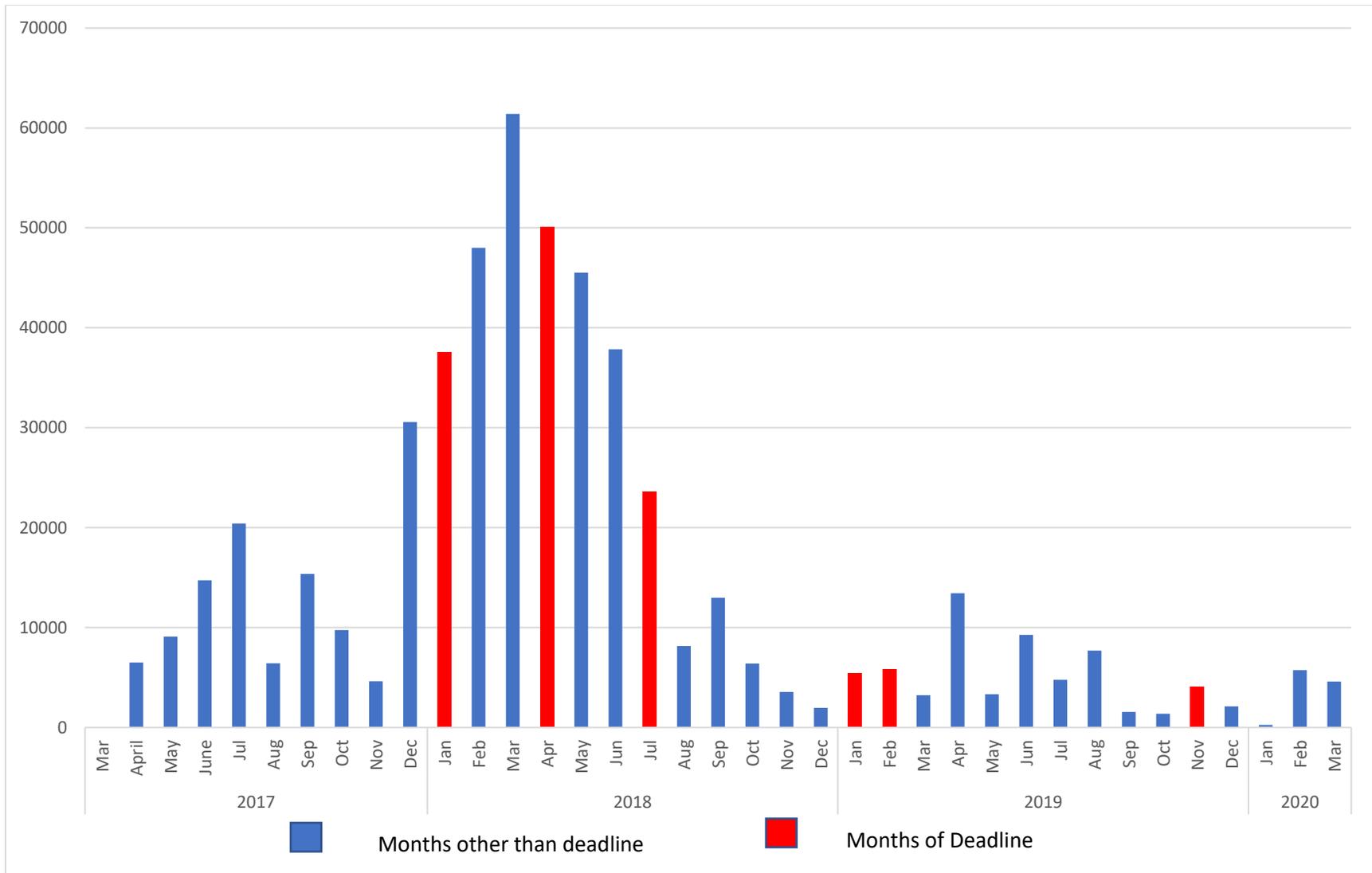


Figure 4: No of beneficiaries receiving second tranche every month

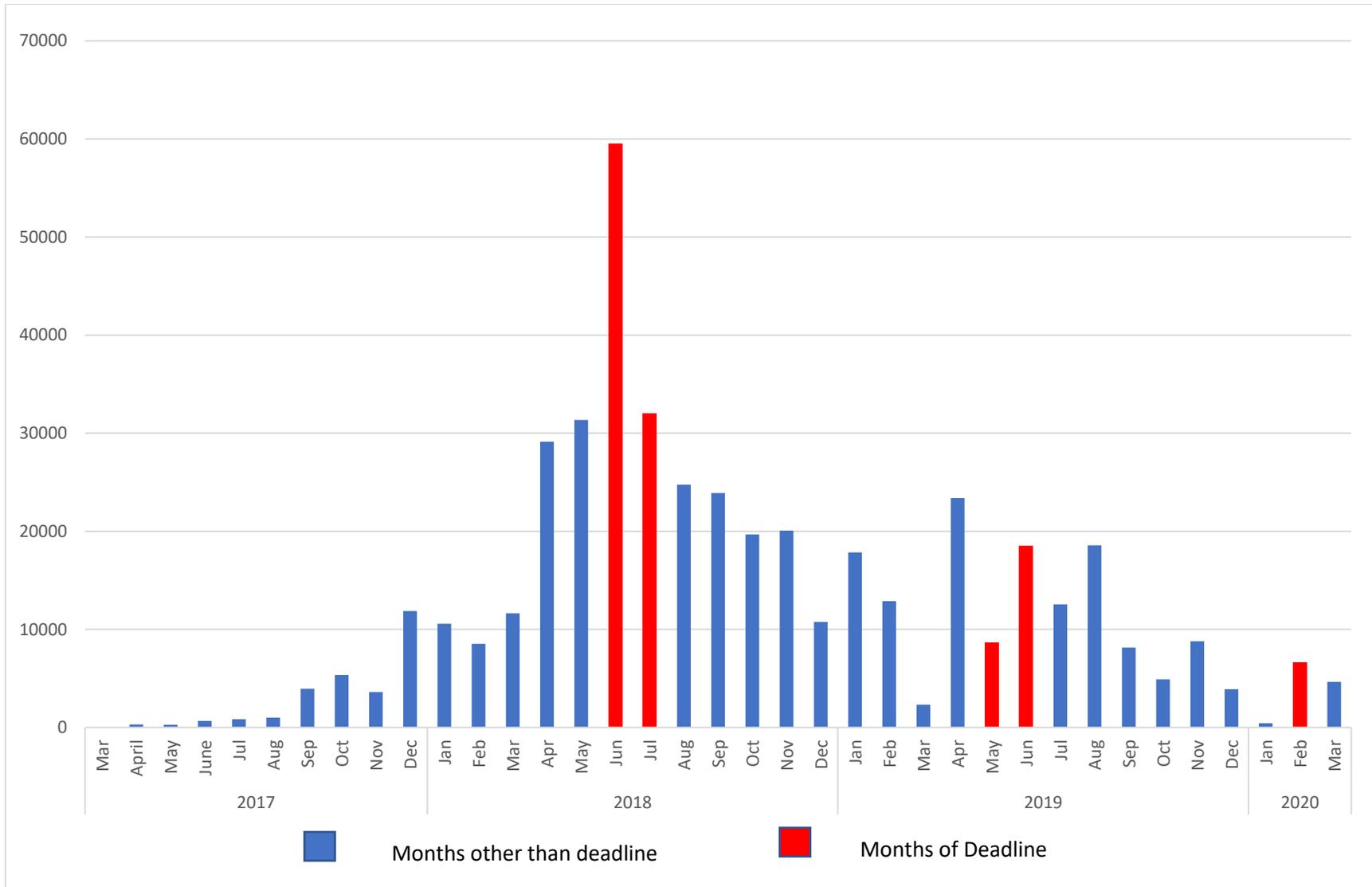


Figure 5: No of beneficiaries receiving third tranche every month

3.4 Impact of Government Tranche Deadline

a) Start of Construction

Out of total 87,543 sample, it was found that 2,342 houses were constructed in between January 2016 to September 2016, which is when compared with other durations, is the lowest in the number of start of construction. 54,446 houses were constructed in between July 2017 to March 2018, after tranche deadline was announced shows the highest number of the construction start among the 5 different durations. Similar data is reflected in the number of construction per day. 1,815 houses start the constructed in a day in between July 2017 and January 2018, while 78 houses are constructed in a day in between January 2016 and September 2016.

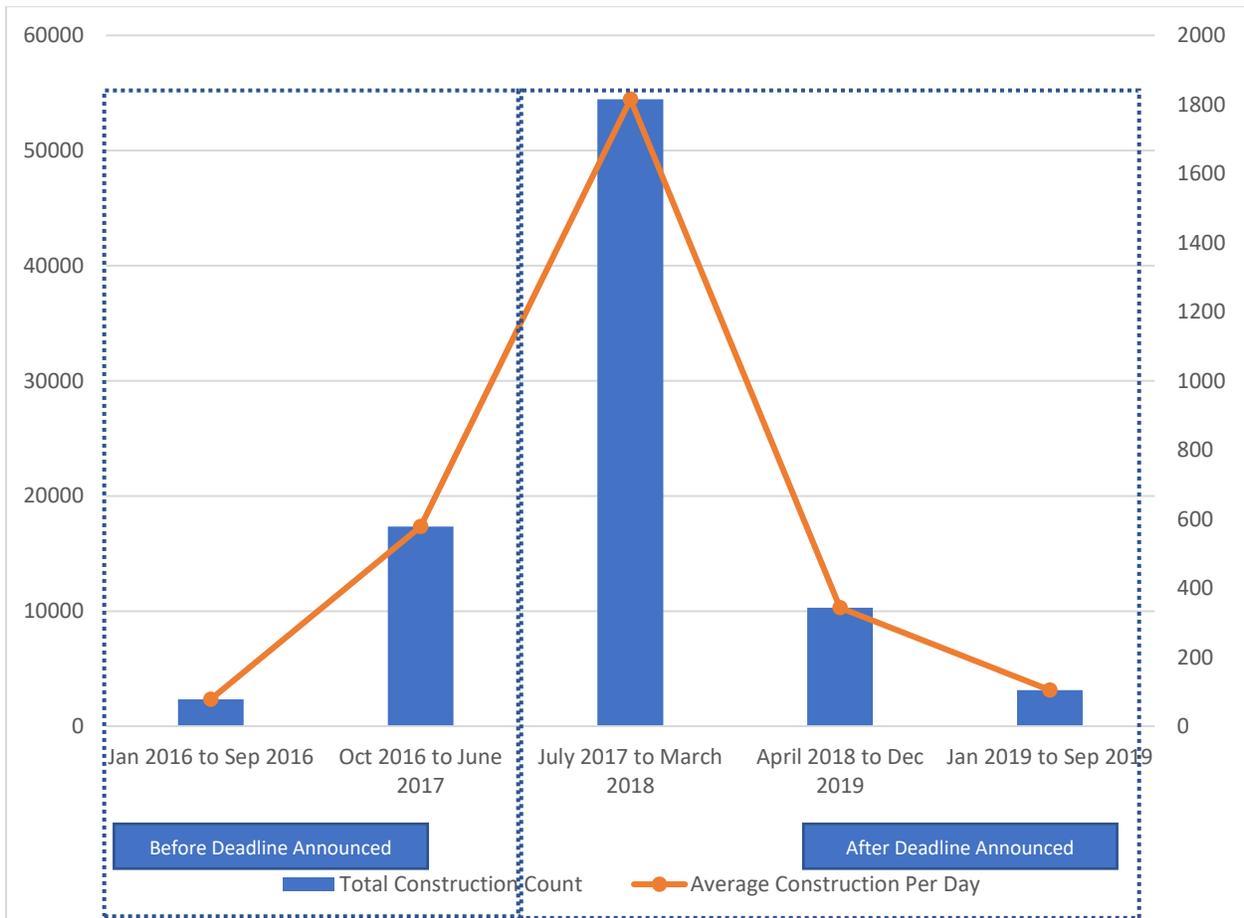


Figure 6: Status of Construction Start in different periods

b) Preference of One room

Out of the total 79,380 sample data, it was found that 1,914 houses were constructed in between January 2016 to September 2016, 15,163 houses were constructed in between October 2016 and June 2017 and 49,958 houses were constructed in between July 2017 to March 2018 which is the highest in construction data, 9,494 houses were constructed in between April 2018 to December

2018 and 2,851 houses were constructed in between January 2019 and September 2019. Out of these houses which were constructed in different time the highest number of construction of one room is in between the July 2017 and March 2018 and lowest is in between January 2016 and September 2016. However, if the number of total construction is compared to the number of one room constructed, the trend shows 33.8 % of the one room among the total construction was seen in between the months of January 2019 and September 2019, which is highest among all the durations when compared with percentage of one room. The trend also shows 15.8 % of the one room among the total construction was seen in between October 2016 and June 2017. In compared to the percentage of one room houses out of the total construction samples which is 24.4%, except the duration of October 2016 to June 2017, other durations are higher than this percentage.

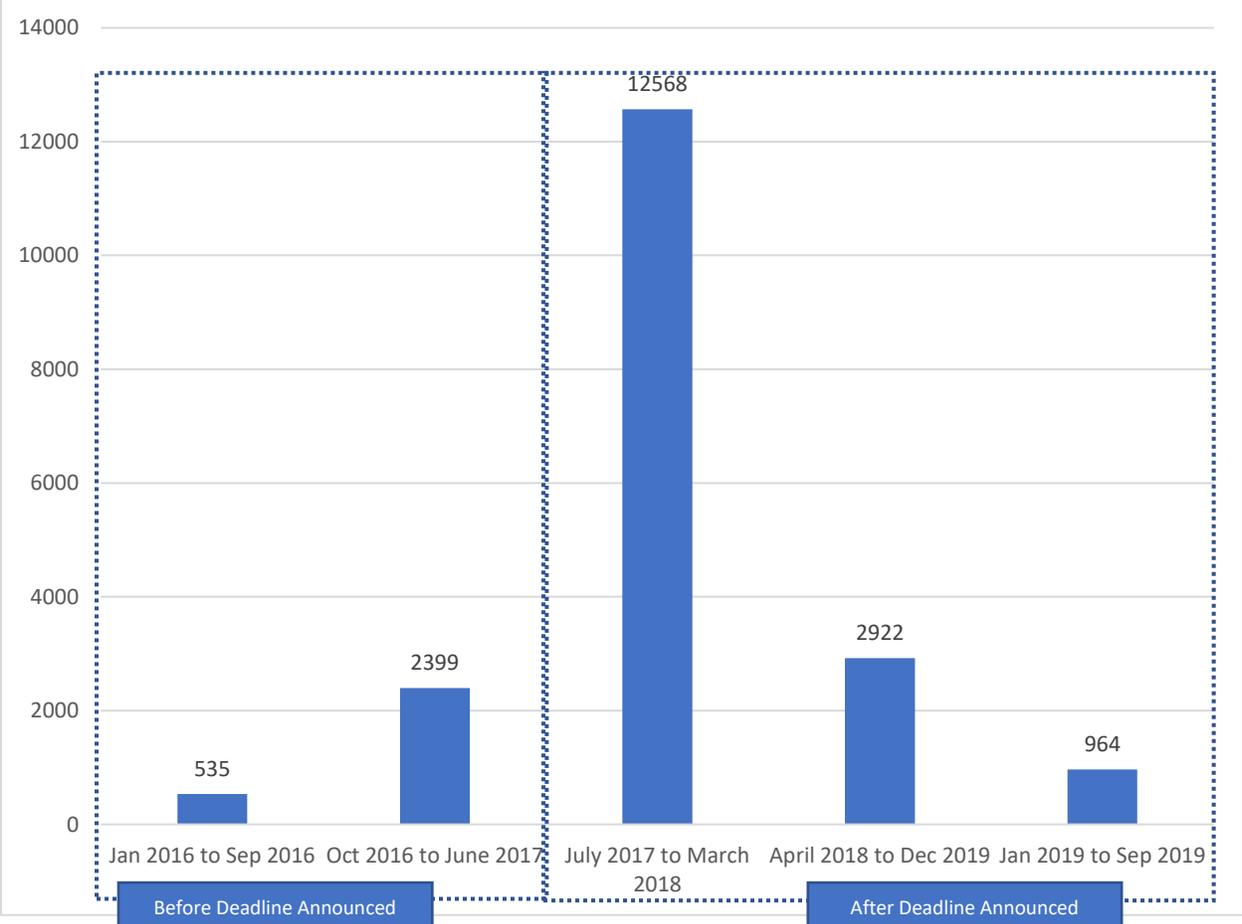


Figure 7: No of One Room Houses in different periods

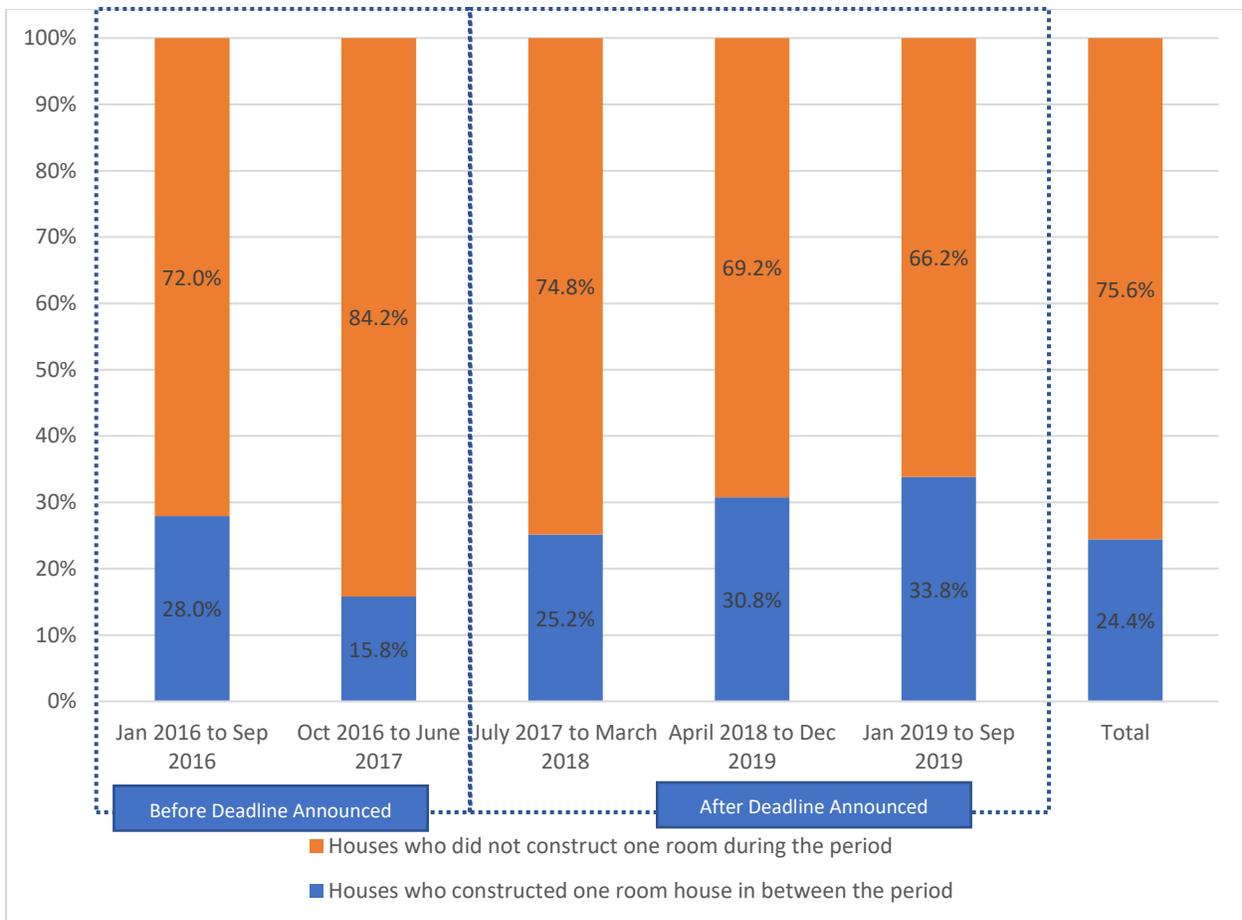


Figure 8: Preference of One room in different period

c) Preference of Plinth area

Out of the total 85,948 sample data, it was found that 1,558 houses were constructed in between January 2016 to September 2016, 16,239 houses were constructed in between October 2016 and June 2017 and 53,725 houses were constructed in between July 2017 to March 2018, 11,067 houses were constructed in between April 2018 to December 2018 and 3,359 houses were constructed in between January 2019 and September 2019. Figure 9 shows, the range of the plinth area below 199 square feet is highest in the duration of January 2019 and September 2019 and lowest in between October 2016 to June 2017. Comparing the duration's data with total data, it is seen that the percentage of the houses less than 199 square feet which is 14.0%, is higher than the houses constructed before tranche deadline was announced and less than the houses after tranche deadline was announced. Similar trend is seen for the range of plinth area in between 200 and 359 square feet.

However, the trend is different for the range of plinth area in between 360 and 560. The durations before the tranche deadline was announced show high percentage of the houses in compared to the percentage of total data and the durations after tranche deadline was

announced show comparatively low percentage in compared to the percentage of total data of range 360 to 560. Similar trend is seen for the range of plinth area in between 560 and 999 square feet and above 1000 square feet.



Figure 9: Preference of Plinth Area in different Periods

d) Preference of structure types

Out of the total 87,161 sample data, it was found that 2,333 houses were constructed in between January 2016 to September 2016, 17,311 houses were constructed in between October 2016 and June 2017 and 54,239 houses were constructed in between July 2017 to March 2018, 10,194 houses were constructed in between April 2018 to December 2018 and 3,084 houses were constructed in between January 2019 and September 2019. Figure 8 tells the most popular type of structures that were constructed among the samples are SMM and BMC. The trend of construction of BMC is increasing in each durations starting from January 2016 to September 2019. However, the trend of SMM is decreasing in each duration. The people who constructed SMM are highest (56.8%) in percentage in 2016 and comparatively lower (35.9%) than BMC in 2019. The people who constructed “other” types of structures, are decreasing before the tranche deadline was announced but area increased after tranche deadline was announced. The trend for construction of RCC is

highest (18.8%) is in 2016 and lowest (12.4%) in 2019. The trend of construction of RCC is also decreasing with time.

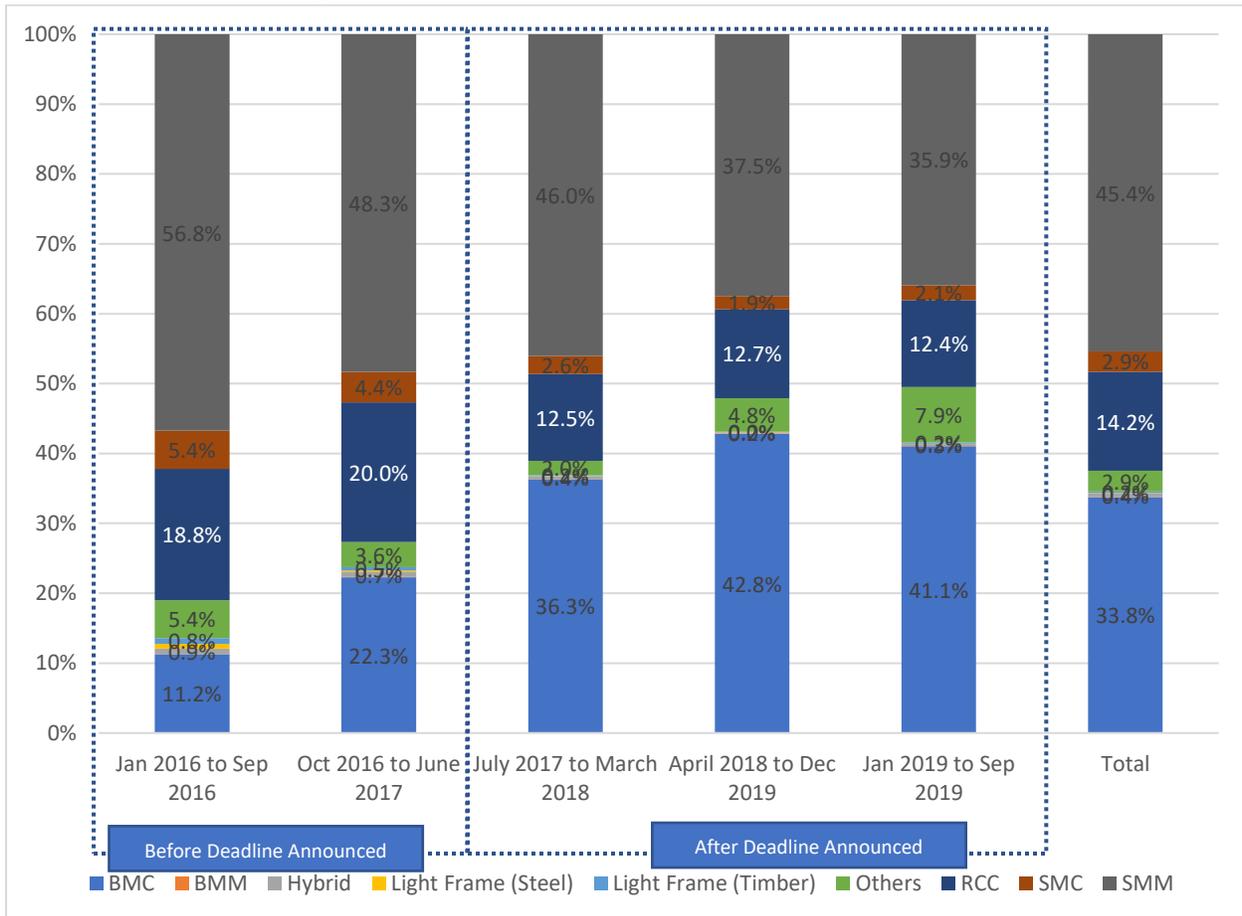


Figure 10: Preference of Structure Type in different periods

e) Average Loan and Interest in Loan

Out of the total 79,689 sample data, 425 people constructed the house in between January 2016 to September 2016, 244 took loan. 4,746 people constructed the house in between October 2016 and June 2017, 2,945 took loan. 23,011 houses were constructed in between July 2017 to March 2018, 14,145 took loan. 37,174 houses were constructed in between April 2018 to December 2018, 21,320 took loan. 14,333 houses were constructed in between January 2019 and September 2019, 6,799 took loan. The average loan is highest in the duration of January 2019 to September 2019 and lowest in the duration of January 2016 to September 2016. The average loan percent is highest in January 2016 and September 2016 and lowest in April 2018 and December 2018.



Figure 11: Average Loan and Loan Interest

4. Discussions

A beneficiary was eligible to receive first tranche immediately after PA which resulted in 89.6% beneficiaries receiving first tranche by March 2017, but by that time the number of beneficiaries who received second and third tranche was very low as to receive these tranches house should be technically verified after construction has reached to certain level (NRA, 2015).

The number of people receiving second tranche was high in the month of July 2017, when the deadline was announced, as compared to previous month and again the number starts to increase from the month of December 2017 to March 2018 and remains high until July 2018 as the January 2018 was the initial deadline to receive second tranche which was postponed to July 2018. The number of people receiving third tranche started increasing rapidly from April 2018 and was highest in June 2018 just before the first deadline. This shows that the number of beneficiaries receiving second and third tranche has been increased drastically by deadline accelerating reconstruction.

With the policy to provide tranche to all the interested beneficiaries that will not exclude the vulnerable beneficiaries too (Diplomat, 2018), the government tranche deadline was extended 7 times (Figure 1). The first deadline had the biggest impact on second and third tranche with large number of beneficiaries receiving tranches before it. The short government tranche deadline with conditions of technical standards and complicated process of getting housing grant created the pressure on the beneficiaries to complete the housing reconstruction in the limited time. With extension of deadline number of times, the trust towards the government tranche deadline among beneficiaries is declining which is demonstrated by the less impact of these deadlines on beneficiaries to start construction and receive tranche (Figure 4 and 5).

The nine-month period after announcement of first deadline has highest number of beneficiaries starting the construction. Though the pattern of number of construction is different in five different durations, the highest is in between July 2017 and March 2018 and lowest is between January 2016 and September 2016. Most of the people who were waiting to construct the houses after the earthquake were informed that they can only get the tranche if they construct within the government tranche deadline (Diplomat, 2018). So with their best efforts, the highest number of construction can be seen at this duration. There is less impact of the extended government tranche deadlines as most of the people started construction with in that period and remaining ones are the vulnerable (Lyons et al., 2010) and one who did not need houses at immediately or had another house.

The number of the total construction is being followed by the number of the one room houses during different periods. So the duration after the first announcement of the tranche deadline has the highest number of one room houses. The construction of one room houses, when compared with the total construction is not strongly influenced by the announcement of the tranche deadline as even before the deadline there are one room houses which were being constructed. However, the government tranche deadline cannot be ignored as it has a slight influence in the construction of one room, as the relative percentage starts increasing after tranche deadline is announced. Field experiences say, most of the people construct one room because of the less land area or financial capacity or just because of the requirements of the people.

Similarly, the number of houses with smaller plinth area has been increasing while the number of houses with larger plinth areas has been decreasing after tranche deadline was announced. When people hurried to meet the tranche deadline the cost of construction materials, transportation and labours increased (CFP, 2018). Increased cost of construction can be on one of the reason for increase number of smaller and one room houses. The Inter Agency Common Feedback Project (CFP, 2018) presented that government tranche deadline as one of the major factor influencing homeowners to build homes irrespective of their needs. At the time of the announcement of government tranche deadline, NRA did not consider about appointing additional human resources and monitoring price of construction material. This resulted in beneficiaries facing the problem for

inspection of their houses and procurement of good quality construction material on reasonable price.

The impact of government tranche deadline on preference of building structure is not clear. We can see that from start of reconstruction process the number of RCC and SMM houses has been decreasing while the number of BMC houses along with houses with new technologies is increasing. There is a reduction of preference of stone and people have chosen bricks as alternative because it is quicker to build with bricks (Humanitarian, 2018). Besides, there may be other factors like introduction of design catalogue II (DUDBC, 2017) which helped people to know more about other construction technologies etc.

Increment in mean loan amount taken by beneficiaries was found after the announcement of first tranche deadline. Increase in construction cost and decrease in construction duration due to the government tranche deadline could be the reason for increased loan amount. However, the loan interest rate is highest before the deadline was announced. As we can see the interest rate in the informal sector is very high (Koirālā & Sharma, 2004) it is seen that the high average interest rates are introduced in the beginning of the reconstruction to the beneficiaries and average rate is reduced later. This increased the capacity of beneficiaries to take loan which is increasing with time but with less percentage of loan interest.

5. Conclusion and Recommendations

The research was conducted to check the impact of the government announced tranche deadline for receiving the tranches. The study found that the impact varies in different factors in housing reconstruction. The people were highly motivated to start the construction and receive tranches and complete the construction too. The trend showed, the people who really needed the houses and the government grant started, received second and third tranches with in the first announced deadline. The remaining tranche deadlines also had an impact but not as impactful as the first one as people started to think that the government is going to extend it. The government announced tranche deadline has a good impact in the rate of construction and to bring more people inside the shelter in time. The government tranche deadline makes the beneficiaries attention and it is one of the catalyts to speed up the housing reconstruction.

The preference in the one room construction has not been affected highly by the announcement of the tranche deadline but it has increased with increase in time. The research suggests that the construction of one room is not completely dependent on the basis of tranche deadline but it has several other reasons which can be identified with further study on reasons of one room construction. Construction of one room also can be the result of necessity. The time bound reconstruction with deadline to receive tranche, had similar impact in the construction of smaller size houses, but the impact is not very strong. Even after deadline is announced, people had more preference in the smaller size houses but still this was also dependent on the requirement of people.

It can be concluded that the first deadline did not have a strong impact in the construction of one room or smaller size houses, but people intend to construct one room house or smaller size house with increase in time. The government announced the different schemes of loan for the people constructing the house. As it took long time for the government to finalize the policy and get consensus from the Bank and Financial Institutions, the people had to take loan through informal sectors in high interest rates (Solutions, 2019). This can also conclude that the loan of beneficiaries for constructing the houses has not been influenced by the government tranche deadline but with increase in time, people started to take more loan with less interest rates.

It is suggested that the government must consider the minimum influence impacted by the tranche deadline and bring the policy accordingly to lessen even this impact at minimum level. In addition, the duration of tranche deadline must be longer than that was experienced in Nepal and it should be extended only for special remaining people so that people can rely on the policy of the government.

For further study, it would be interesting to analyze the reasons in details why people constructed one room, if it was not completely based on deadline. Why all the people did not take tranche within the announced deadline? The next research can perform a cognitive study on the perception of the people towards deadlines.

As a conclusion from the understanding of the tranche deadline announcement and its impact, it can be suggested that post disaster reconstruction where the large scale-housing reconstruction has to be done, providing tranche deadlines are effective to accelerate the construction. However minimum impact should be considered regarding the indirect influence of government tranche deadline in construction of one room or smaller size houses.

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