Financial Mobilization Status of People Housing Program - A Case of Rupandehi District of Nepal

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ABSTRACT

The overall objective of this study is to assess the implementation status of *Janata Awash* Program in Rupandehi, Nepal, where the program is scattered over 13 VDC and 4 Municipality (before readjustment of local level). Up to last fiscal year around 430 houses are completed through *Janata Awash* Program phase I and 18 houses are added in the second phase and remain 52 houses are canceled due to different reasons. In phase II 13 houses are canceled and 125 are on the implementation phase and near to compete. Earned value analysis has been carried out based on physical progress and financial progress which shows that the program is behind the planned schedule and under budget.

Keywords: Implementation, Phase I, Phase II, Earn Value Analysis

1. INTRODUCTION :

Housing is one of the basic needs for all the people and the inclusion must be focussed in the process of providing the housing facilities to the people. The Government of Nepal has implemented a special housing program called 'People Housing Program' *(Janata Awash Karyakram)* targeted especially for the *dalits* (untouchables) deprived and backward groups like *Chepang, Bankariya* and deprived class of *TeraiMadhesh* (Southern Plain). The program was started in the Fiscal Year 2009/2010 and has adopted the policy of implementing this program also for the *Raute, Kusunda* as well as the *badi* communities. The program is focused on the deprived class and marginalized ethnic groups of the society. And also, the government of Nepal has the aim to construct 22647 units of houses in the whole country last year (DUDBC, 2019) [1]. These houses are constructing under the supervision of the division office. This program is now widely spread in 74 districts of Nepal. Janta Awash in Rupandehi has a widespread work area than other districts. It covers 13 village development committees and four municipalities. So, during the beneficiaries' selection and formation of the user committee before construction may create different problems and challenges also on the construction stage. Due to this problem, construction speed and progress are directly affected. And also, the people thought about the program are different from the goal of government. The present condition of the housing implementation project has also not been studied yet. Hence, it is necessary to obtain implementation challenges for the low-income group of people in the Rupandehi district in a proper way.

2. OBJECTIVES :

To find out the financial mobilization status and work progress for the housing under construction to the targeted group of the low-income people in Rupandehi of Nepal.

3. DATA COLLECTION :

The secondary data have been obtained from DUDBC office, I/NGO'S along with a discussion of key persons.

4. ANALYTICAL RESEARCH

The analytical research was helpful to carry Earned value analysis for finding out the relation between

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financial progress and physical progress. Data obtained from the Ministry of Physical Infrastructure Development Province No. 5 was used for this analysis by using the following formulas (MOPID, 2019) [2].

Planned Value (PV)

Earned value (EV)=value of the % of work complete

Actual cost (AC)

BAC

Cost variance (CV)=EV-AC

Schedule Variance (SV)=EV- PV

Cost Performance Index (CPI)=EV/AC

Schedule Performance Index (SPI)=EV/PV=

If there is no variance at all:

Estimate at Completion (EAC)=BAC

Estimate to Compete (ETC)=EAC-AC

If there is no variance and it is expected to continue:

Estimate at Completion (EAC)=BAC/CPI

Estimate to Compete (ETC)=(BAC/CPI)-AC

If there is variance, but now it's gone:

Estimate at completion (EAC)=AC+BAC-EV

Estimate to Compete (ETC)=BAC-EV

Variance at Completion (VAC)=BAC-EAC

(i). If there is no variance at all:

VAC=BAC-EA

(ii). If there is no variance and it is expected to continue:

VAC=BAC-EAC

(iii). If there is variance, but now it's gone:

VAC=BAC-EAC

Total Cost Performance Index (TCPI)=(BAC-EV)/(EAC-AC)

(i). If there is no variance at all:

To Complete Performance Index (TCPI)=(BAC-EV)/(EAC-AC)

(ii). If there is no variance and it is expected to continue:

To Complete Performance Index (TCPI)=(BAC-EV)/(EAC-AC)

(iii). If there is variance, but now it's gone:

To Complete Performance Index (TCPI)=(BAC-EV)/(EAC-AC)

Note: BAC= Budget at Completion

Table 1: Summary of Methodology

Objective; To find out the financial mobilization status and work progress for the housing under construction to a targeted group of the people in Rupandehi of Nepal	**Data needed;** Progress report and status and other data basically DUDBC, 2011[3] DUDBC, 2019 and 2017 [4] Lumanti 2008 and 1995 [5-6], MOPID 2076BC [2]	**Collected from;** Government Bodies, NGOs, INGOs and constructive adoption of methods and comparison from Mishra and Shah (2018) [7], Shah and Mishra (2018) [8], Mishra, (2019) [9] was done throughout the study.	Earned Value Analysis methods (adopted from Mishra and Bhandari 2018 [10]).

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5. RESULTS AND DISCUSSIONS :

5.1 WORK PROGRESS AND IMPLEMENTATION STATUS :

Status of user committee :
Among 500 numbers of total selected applicants, 448 numbers of applicants joined on different construction having committee members ranging from 5 to 18. In the second phase also among 138 numbers, 124 numbers joined on different user committees as the same process of phase I based on the Implementation Guidelines of *Janata Awash* Program. *Details* are shown below in table 2.

Table 2: Working through the Status of Rupandehi

Rupandehi Phase I			
Total Houses No.	Worked through User Committee	Worked through single beneficiaries	Canceled
500	448	4	52

Rupandehi Phase II			
Total Houses No.	Worked through User Committee	Worked through single beneficiaries	canceled
138	124	11	13

(Source: UDBO, Rupandehi)

Cause of cancelations and the details of the progress of single applicants are documented and presented in table 11. There are around 58 numbers of user committee expressed their view the process of implementation of through user committee is very much effective and they felt very easy to work on group.

Tribe *(Jati)* Wise Selected Detail of Applicants in Phase I.
The details of *Jati* wise distribution of applicants in phase I of the program based on the distribution area are presented below in table 3.

Table 3: Total Applicants Status of Janata Awash Karyakram in Rupandehi

SN	Location	Total Applicants No's	Selected Applicants No's	Hindu Selected Applicants	Musalmans Selected Applicants
1	DEVDAHA	281	60	57	3
2	TILIOTTAMA	165	29	28	1
3	SAINAMANA	184	43	43	0
4	LUMBINI	338	85	50	35
5	BODHABAR	261	63	55	8
6	DHAKADHAI	78	17	12	5
7	POKHARBHINDI	32	5	2	3
8	SIKTAHAN	144	36	32	4
9	BAGAHA	62	11	7	4
10	BSANTAPUR	32	8	6	2
11	MAINAHIYA	66	13	11	2
12	HATIBANGAI	56	7	7	0
13	BISNUPURA	80	22	16	6

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14	SURYAPURA	91	22	19	3
15	BOGADI	82	20	20	0
16	RAYAPUR	68	19	17	2
17	KARAUTA	194	40	23	17
	Total	2214	500	405	95

(Source: UDBO, Rupandehi)

Area Wise Implementation Status of Phase I :
Area wise implementation status and progress report of Janata Awash Program of phase (I) are shown in Table 4.430 numbers of houses are completely constructed and handover to the related households, 3 numbers of houses are under construction and the rest of 500 are canceled. Among canceled houses, 18 number of houses are selected and again started to construct through the second phase and still on the implementation phase.

Table 4 : Area Wise Implementation Status and Progress Report of Phase I

SN	Location	Total Applicants No's	Selected Applicants No's	Progress Status				Cancelled due to different reason
				DPC	Wall	Roof	All completed	
1	DEVDAHA	281	60	-	-	-	49	11
2	TILIOTTAMA	165	29	-	-	-	22	7
3	SAINAMANA	184	43	-	-	-	40	3
4	LUMBINI	338	85	-	1	-	76	8
5	BODHABAR	261	63	-	-	-	57	6
6	DHAKADHAI	78	17	-	-	-	7	10
7	POKHARBHINDI	32	5	-	2	-	2	1
8	SIKTAHAN	144	36	-	-	-	34	2
9	BAGAHA	62	11	-	-	-	11	0
10	BSANTAPUR	32	8	-	-	-	8	0
11	MAINAHIYA	66	13	-	-	-	11	2
12	HATIBANGAI	56	7	-	-	-	0	7
13	BISNUPURA	80	22	-	-	-	13	9
14	SURYAPURA	91	22	-	-	-	22	0
15	BOGADI	82	20	-	-	-	19	1
16	RAYAPUR	68	19	-	-	-	19	0
17	KARAUTA	194	40	-	-	-	40	0
	Total	2214	500	-	3	-	430	67

(Source: UDBO Rupandehi)

Election Area wise Selected Applicants distribution in Phase II :
During the panning of the second phase, the program is planned to distribute in all election area and a total no of houses to be constructed on different election areas were decided first as shown below in table 5. This table also shows the number of *hindus* and *musalmans* selected numbers of household.

Table 5 : Selected Applicants Distribution in Phase II

SN	Election Area No	Hindu	Musalmans	Total
1	1*ka*	8	2	10
2	1*kha*	6	4	10

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3	2*ka*	10	0	10
4	2*kha*	0	0	0
5	3*ka*	0	0	0
6	3*kha*	6	2	8
7	4*ka*	14	6	20
8	4*kha*	20	0	20
9	5*ka*	28	2	30
10	5*kha*	18	12	30
	Total	110	28	138

(Source: UDBO Rupandehi)

Election region number wise Implementation Status and Progress Report of Phase II :
In the second phase among 138 selected numbers of beneficiaries, 13 numbers of houses are canceled, one house is on DPC complete phase, another is also on wall complete phase,76 numbers of houses are on the phase of roof completion, finally, 53 numbers of houses are on the phase of toilet completion and finally three number of houses are ready to hand over until last of the fiscal year 2015/16. Details of elections wise progress status are shown below in table 6.

Table 6 : Election no Wise Implementation Status and Progress Report of Phase II

S.N.	Election Region No.	Total Houses	DPC completed	Wall completed	Roof Completed	Toilet completed	All completed	No. of Not started houses
1	1(1)	10	1	-	1	4	3	1
2	1(2)	10	-	-	1	6	-	3
3	2(2)	10	-	-	1	5	-	4
4	3(2)	8	-	-	4	4	-	-
5	4(1)	20	-	-	12	8	-	-
6	4(2)	20	-	-	10	10	-	-
7	5(1)	30	-	1	19	6	-	4
8	5(2)	30	-	-	19	10	-	1
	Total	138	1	1	67	53	3	13

(Source: UDBO Rupandehi)

Work Progress and Implementation status of UDBO Rupandehi :
The total implementation status and progress of Rupandehi, Kpilbastu, Argakhanchi, Palpa, Nawalparasi (Susta-West) up to Fiscal year 2015/16 implemented through UDBO Rupandehi is shown in table 7.

Table 7: Total Work Progress and Implementation Status of UDBO Rupandehi

Building Office Rupandehi	
Progress Level	No of Housing Units
Plinth level completed	18
Wall Level completed	14
Roof work Complete	76
Toilet work Remained	405
All Completed	1134

(Source: UDBO Rupandehi)

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As per the data of Fiscal Year, 2018/019 obtained from the Ministry of Physical Planning and Infrastructure Development province No 5, financial progress and physical progress and budget details are shown below in table 8.

Table 8: Financial Status of Janata Awash Program in Rupandehi

Program Name	Allocated Budget	Spent Budget	Financial Progress	Physical Progress
Janata Awash Program	Rs 74774000	Rs 45877800	61.63%	75%

(Source: MOPID Province No 5)

Table 9: Financial Mobilization and Payment Stage of *Janata Awash* Program

I phase 2016/017 Program		II phase 2018/019 Program
Financial Mobilization Stage	Amount in Rs	Amount in Rs
First Installment	53810	83125
Second Installment	64570	99750
Third Installment	75330	116375
Final Installment	21529	33250
Contingencies	10761	17500
Total	226000	350000

Table 9 clearly showed the installment details of the program during the implementation stage of both phases I and II. The first installment is provided to beneficiaries after the work completion of the plinth level and simultaneously other installments are provided after the completion of wall erection roof completion and finally successfully construction of the toilet and set up windows and door.

Financial Status Based on Election Area :
Payment for a new agreement, Payment for old agreement, total allocated budget in F/Y 2018/019and remaining in allocated budget details based on different election areas are shown clearly below on table 10.

Table 10: Election Area Wise Amount Spent to Users in Phase II of Rupandehi

S.N.	Election Region No.	Payment for new agreement	Payment for old agreement	Total Allocated Budget in F/Y2075 -76	Remaining in Allocated Budget
1	1(1)	5449085	1320183		736345
2	1(2)	2034900	235369		232750
3	2(2)	1879225	395211		199500
4	3(1)	1197000	41980		133000
4	3(2)	2394000	82200		232750
5	4(1)	5985000	-	45315696.00	665000
6	4(2)	5985000	-		665000
7	5(1)	8079750	164540		897750
8	5(2)	9875250	197003		1097250
	Total	42879210.00	2436486.00		4859345.00

(Source: UDBO Rupandehi as of DUDBC, 2019)

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5.2 Earned Value Analysis of Program :

As per data from the Ministry of Physical Infrastructure Development (2019) and methods adopted from Mishra and Bhandari (2018), the allocated budget and Spent budget for F/Y 2018/19 was Rs. 74774000 and Rs. 45877800 respectively. Also, the physical progress was found as 75% where financial progress as 61.63%.

In this program (PHP), Schedule variance was found as Rs -18693500; it means the program is behind the schedule, Cost variance was found as Rs 10202700; it means the program is under budget.

Here, the value of CPI is 1.223, i.e. Higher than 1, then it indicates the project is under budget.

Here, the value of SPI is 0.75 i.e. less than schedule it indicates the project is performing only 75% of work on schedule.

If there is no variance at all: the value of EAC (Estimate at completion) was found as Rs 74774000; it means Rs 74774000 is the estimated amount for completion of work, the value of ETC (Estimate to complete) was found as Rs 28896200; it means Rs 28896200 will be required for the completion of remaining work, here in this case, no variation is considered so VAC is zero, the value of TCPI (To complete performance index) was found as 0.64691; it means we can continue with a cost performance index of 0.64691 to complete the project.

If there is variance and it is expected to continue: the value of EAC (Estimate at completion) was found as Rs 61170400; it means Rs 61170400 is the estimated amount for completion of work, the value of ETC (Estimate to complete) was found as Rs1529260; it means Rs 1529260 will be required for the completion of remaining work, the value of VAC(variance at completion) is Rs 1360360; it means the project will be under budget by Rs 1360360, the value of TCPI (To complete performance index) was found as 1.22; it means that for the remainder of the project, for each budget rupees spent there must be a gain of Rs 1.22 of earned value.

If there is variance, but now it's gone: the value of EAC (Estimate at completion) was found as Rs 6457130; it means Rs 6457130 is estimated amount for completion of work, the value of ETC (Estimate to complete) was found as Rs1869350; it means Rs 1869350 will be required for the completion of remaining work, the value of VAC(variance at completion) is Rs 1020270; it means the project will be under budget by Rs 1020270, the value of TCPI (To complete performance index) was found as 1; it means that the project has just enough funds to complete the work. Other details calculation and their values EAC, ETC, and TCPI based on three various cases of variation are calculated in table 11.

Table 11: Earned Value Analysis

AS per data from Ministry of Physical Infrastructure Development	Value
Allocated Budget=	7,47,74,000
Spent Budget=	4,58,77,800
Physical Progress=	75%
Financial Progress=	61.63%
Project Duration=	12 Months
Planned Value (PV)=	7,47,74,000
Earned value (EV)= value of the % of work complete=	5,60,80,500
Actual cost (AC)=	4,58,77,800
Budget at completion (BAC)=	7,47,74,000
Cost variance (CV)=EV-AC=	1,02,02,700
Schedule Variance (SV)=EV-PV=	-1,86,93,500
Cost Performance Index (CPI)=EV/AC=	1.222389
Schedule Performance Index (SPI)=EV/PV=	0.75
If there is no variance at all:	
Estimate at Completion (EAC)=BAC=	7,47,74,000
Estimate to Compete (ETC)=EAC-AC=	2,88,96,200
If there is variance and it is expected to continue:	
Estimate at Completion (EAC)=BAC/CPI=	6,11,70,400
Estimate to Compete (ETC)=(BAC/CPI)-AC=	1,52,92,600

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If there is variance, but now it's gone:	
Estimate at completion (EAC)=AC+BAC-EV=	6,45,71,300
Estimate to Compete (ETC)=BAC-EV=	1,86,93,500
Variance at completion (VAC)=BAC-EAC	-
(i). If there is no variance at all:	
VAC=BAC-EAC=	0
(ii). If there is variance and it is expected to continue:	
VAC=BAC-EAC=	1,36,03,600
(iii). If there is variance, but now it's gone:	
VAC=BAC-EAC=	1,02,02,700
Total Cost Performance Index (TCPI)=(BAC-EV)/(EAC-AC)	-
(i). If there is no variance at all:	
To Complete Performance Index (TCPI)=(BAC-EV)/(EAC-AC) =	0.646919
(ii). If there is variance and it is expected to continue:	
To Complete Performance Index (TCPI)=(BAC-EV)/(EAC-AC) =	1.222389
(iii). If there is variance, but now it's gone:	
To Complete Performance Index (TCPI)=(BAC-EV)/(EAC-AC) =	1
Note: All amounts are in Rs.	

6. CONCLUSION:

(1) After the study, we found the construction user committee plays a vital role in the successful implementation of the program. 448 and 124 no of beneficiaries are under different construction committees and among them 430 houses already constructed up to last fiscal year. Rests of them are on the implementation phase except for 34 and 13 nos of houses. Whereas four users in I phase and 13 users in II phase are constructing their houses separately.

(2) People really happy from the program and they want to say thanks to the government but expressed their view about house size if slightly large with separate kitchen (especially in *musalmans*) will be far better.

(3) After the study, it has also shown that the physical progress is greater than financial progress but earned value analysis shows that the program is behind the planned schedule.

7. RECOMMENDATIONS :

(1) In tasks assigned to the users' committee, because of incapability or inefficiency of a single member, programs are turning ineffective, so management should be improvised and strengthened.

(2) As per our study on earn value analysis, the delay is significant and behind the schedule. With physical and financial progress at stake and time management in consideration, with sufficient resource allocation, resource management, enhancing technical expertise, boosting awareness among locales, organizing effective mason training sessions, this delay can be substantially reduced.

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