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NATIONAL SAMPLE SURVEY ORGANISATION

पैंतीसवां दौर
THIRTY FIFTH ROUND

जुलाई 1980 — जून 1981
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REPORT ON PILOT SURVEY ON CONSTRUCTION IN
URBAN AREAS

(योजना-ख)
(SCHEME-B)

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नई दिल्ली
NEW DELHI

GOVERNMENT OF INDIA
NATIONAL SAMPLE SURVEY ORGANISATION

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GOVERNMENT OF INDIA
NATIONAL SAMPLE SURVEY ORGANISATION
THIRTYFIFTH ROUND : JULY 1980 - JUNE 1981
REPORT ON
THE EXPLORATORY SURVEY ON CONSTRUCTION :
SCHEME - B
CHAPTER ONE : DESCRIPTION OF THE SURVEY

INTRODUCTION

1.1 The thirty fifth round of the National Sample Survey (NSS) (July 1980 to June 1981) was devoted to a survey on social consumption and an exploratory survey on construction. The latter consisted of two parts : Scheme - A and Scheme - B. Scheme - A was carried out in the sample villages of sub-sample 1 in the rural sector and all the sample blocks in the urban sector. Schedule 1.4 : Particulars of Construction was canvassed in a sample of constructions selected from a list of constructions identified at their site (the "site approach") in the sample villages and blocks. The Scheme - B survey was, however, carried out in an independent sample of towns with the object of examining the feasibility of using the municipal sanction lists (i.e. sanction for construction of buildings) as a sampling frame for construction survey. This report is based on the results of the Scheme - B survey.

1.2 A description of the Scheme - B survey is given in this chapter in the following paragraphs. The important results thrown up by the survey are analysed in Chapter Two. This analysis will be based mainly on tables at all-India level. The main conclusions and recommendations are presented in the last Chapter Three.

HISTORICAL BACKGROUND

1.3 The need for reliable statistics relating to housing and construction has been felt for long. The major users of these data are : National Buildings Organisation (NBO), Planning commission (PC and Central Statistical Organisation (CSO). The

main items on which statistical information is generally required are :

- (1) Rate of new construction in urban and rural areas including number of rooms and floor area added during the reference year.
- (2) Index of prices of building materials
- (3) Investment in and financing of building construction (This includes expenditure on building materials, construction services and labour).
- (4) Employment in construction industry
- (5) Wages of construction labour

more than one expert group has gone into the question of how to develop and maintain a statistical system for regularly obtaining the required information; 1 and this has been the subject of discussion at the Conference of Central and State Statistical Organisations (1981 : Agenda Item 5).

1.4 Construction is undertaken by various agencies : government and public sector undertakings, private corporate sector, co-operatives and households. The role of NSS is normally limited to the household sector. At the instance of NBO, NSS has collected data relating to construction in a number of past rounds. A list of these enquiries are given below :-

<u>NSS round</u>	<u>type of data collected</u>
1. 22 to 24, 27 and 28	counts of new buildings completed during one year preceding date of survey (in listing schedule).
2. 15 (rural) and 17 (urban)	current building activity; expenditure on building materials, labour employed and services utilised (as part of data collected on capital formation)
3. survey on investment in and financing of building construction in urban areas (1971-74)	expenditure on building materials, labour and services and source of finance
4. 27 (rural)	- do -

1.5 The experience of these enquiries has shown that construction activity is not evenly distributed in the towns and cities. On the contrary, it is often concentrated in certain areas of the towns. This being the case, a sample of blocks (the first stage sampling units of NSS in the urban sector) selected from a general frame may not be statistically efficient and may fail to yield enough sample constructions at the second stage of selection. In the survey mentioned at serial number 3 above, it may be mentioned here, this problem was sought to be overcome by stratification of blocks by intensity of building activity with the help of ward-wise data on municipal sanctions for building construction.

1.6 If there existed a frame in the form of a list of the buildings constructed during a given reference period (or satisfying any other suitable criterion for that matter, according to the purpose of the survey) the intermediate selection of an areal unit at the first stage can be altogether avoided. It was felt that the lists of sanctions issued for building construction by municipal bodies might serve this purpose.

1.7 A type study was conducted in NSS 34th round (1979-80) in 76 towns covering all population size classes and distributed over the different parts of the country to study the availability of municipal sanction lists, their accessibility and the nature of information available therein which could be used for selection of an efficient sample. It showed that sanction lists were available in all towns with population above 20,000, and also in more than 80% of small towns. While some items of information like address of site, purpose of construction etc. were available, others like agency of construction, completion of construction etc. were not always available. In some towns no sanction is required for additions, alteration and improvement which, however, forms an essential part of construction activity.

1.8 Further to explore the feasibility of using the municipal sanction lists as a sampling frame for selection of building constructions, a pilot survey was included as part of the enquiry on construction in NSS 35th round. The construction survey of 35th round was carried out according to two schemes, designated as Scheme A and Scheme B. Scheme A was, like any other NSS socio-economic (SE) enquiry, undertaken in the general sample of villages and blocks of the round with the schedule 1.4 : Particulars of construction canvassed in a sample of constructions selected at random from a list prepared in the listing schedule. This was intended to build up estimates relating to aspects of construction (including : materials, labour and services consumed, amount and source of finance etc.). Scheme B, on the other hand, was carried out in an independent sample of towns, with the object of studying, most importantly, the utility of the municipal sanction lists for use as a list frame of building constructions for a construction survey. Estimation of population parameters was not the main objective of the Scheme - B enquiry and the survey design was not drawn-up with the purpose of building up such estimates.

SURVEY DESIGN OF SCHEME - B

1.9 Scope and coverage : The Scheme B survey was carried out in the urban sector of all the states and Union Territories of India excepting : Sikkim, Ladakh district of Jammu & Kashmir, Andaman & Nicobar Islands, Dadra & Nagar Haveli and Lakshadweep. (Tripura and Arunachal Pradesh were covered in the survey, but as no returns have been received from there the present report does not include any result pertaining to them) The scope of the survey was limited to building constructions undertaken by households (this in the present context includes individuals, joint families and proprietary and partnership firms), private non-household organisation excluding the corporate sector. Constructions in the public sector and private corporate sector were outside the coverage of this survey.

1.10 The sample design was stratified two-stage with town as the first stage unit and each municipal sanction for building construction as the second stage unit.

1.11 Stratification and allocation of towns : The towns within each state/U.T. were divided into four strata according to their 1971 census population as follows :-

stratum number	1971 census population size class of town		
1	I	(population 1 lakh and above)
2	II	(" 50,000 to 99,999)
3	III	(" 20,000 to 49,999)
4	IV to VI	(" below 20,000)

In the "Central sample" all towns of stratum - 1, 50% of towns of stratum - 2, 25% of towns of stratum - 3 and 10% of towns of stratum - 4 were selected. The same principle of allocation was followed in the "State samples" of the participating states.

1.12 Selection of sample towns : All the towns of stratum - 1 were included in both the central and the state samples. From strata 2 to 4, the sample towns were selected circular systematically with equal probability after arranging the towns in descending order of population. (While selecting, it was ensured that the central and state samples did not contain the same towns). A total of 639 towns were selected in the Central sample and 621 towns in the state sample, the 141 class - I towns forming part of both.

1.13 Stratification and selection of sanctions : In the absence of the dates of commencement and completion of work in the sanction lists it was difficult exactly to know whether a particular sanction order related to a building on which some expenditure on construction was incurred during the usual reference period of one year preceding the date of survey. Hence it was decided to choose purposively four different months

suitably spaced and list all the sanctions issued in these months separately in the hope that an analysis of the data collected from the sample sanctions of these four months would throw some light on the extent of inclusion of extraneous units in the sampling frame as the coverage is extended backwards in time. The 6th, 12th, 28th and 44th months prior to the date of listing were selected for this purpose. In the state sample in the towns of stratum - 1, the months were 12th, 20th, 36th and 52nd prior to listing. (This was done because the towns of stratum - 1 are common to the central and state samples).

1.14 Out of the sanctions issued in each of these months, those, if any, issued to government and public sector undertakings and the corporate sector were excluded, they being outside the coverage of this enquiry. The rest were divided into two sub-strata : sub-stratum - 1 consisting of sanctions issued to households and private non-household organisations except housing co-operatives and sub-stratum - 2, those issued to housing co-operatives only.

1.15 The number of sample sanctions proposed to be selected from sub-stratum - 1 of each month was as follows :-

population class of sample town	allocated sample size for each of the months
(1)	(2)
1 million and above class	25
other class - I and class II	15
classes III to VI	10

All sanctions of sub-stratum - 2 were selected for survey unless the total listed was more than 5, in which case only five of them were to be selected for survey. All selections of sanctions were done circular systematically with equal propability.

1.16 The operations of listing and selection of sanctions were carried out in Schedule 0.2(c) : List of sanctions. Schedule 1.4, 'Particulars of construction', was canvassed in the selected sanctions. The total number of sample sanctions selected in the central sample was 18291. The state-wise distribution of sample towns and sanctions selected and surveyed is given as Annexure at the end of this report.

ESTIMATION PROCEDURE

1.17 This being a pilot survey, a major part of the tables were based on unweighted counts, averages and proportions computed for the various classificatory strata (mostly incorporated in the sample design itself) such as town size class, month of sanction etc. with the object of studying their differential characteristics. Only in the case of tables based on aggregate estimates for domains cutting across the sampling strata, weights have been used.

1.18 In such cases the estimate of total for any variate y at state level is given by :-

$$\hat{Y} = \sum_s \frac{N_s}{n_s} \sum_i \sum_j \sum_k \frac{M_{sijk}}{m_{sijk}} y_{sijke} \quad \text{--- (1)}$$

where : s, i, j, k and l are the suffixes (respectively) for stratum, sample town, month, sub-stratum and sample sanction; N and n stand for total number of towns in stratum and number of sample towns surveyed (including any zero case) in that order; M and m are the number of sanctions listed and surveyed; and y is the value of the variate.

1.19 To estimate the number of constructions, y is taken as the number of constructions covered by a sanction order which is usually 1. Any ratio (e.g. average quantity per construction) is obtained by dividing the estimate of the aggregate appearing as the numerator by that appearing as the denominator.

1.20 The processing of the data was done manually in the D.F. Centres of NSSO (DPD). As the results based on the state sample data have not been ready for many states, this report includes only the data collected in the central sample.

CHAPTER TWO :
RESULTS OF THE SURVEY.

INTRODUCTION

- 2.1 The important results thrown up by this pilot survey are presented in this chapter alongwith a discussion on their implications for methodology. As already indicated, the data given in this chapter relate to those obtained from the central sample only. Further, the discussion here is based on all states pooled results.
- 2.2 The important concepts and definitions adopted for the survey are given below.

CONCEPTS AND DEFINITIONS

- 2.3.1 Building : A building is an independant free standing structure comprising of one or more rooms and/or other spaces covered by a roof and usually enclosed within external walls or dividing walls which extend from the foundation to the roof. If more than one physically separated structure constitute one living unit, all of them together will be treated as a building.
- 2.3.2 New construction : New construction is defined as the erection of an entirely new structure irrespective of whether the site on which it is built was already occupied or not.
- 2.3.3 Addition, alteration or improvement of building : This is the extension and/or the betterment of the existing structures. Such work is intended to increase the usefulness of the structures by making provisions for additional floor space and/or amenities or it extends the life of the structures. Any type of remodelling or renovation or major repair work is to be treated as addition, alteraation or improvement. This will exclude minor repairs.
- 2.3.4 Building construction : New construction or addition, alteration or improvement of a building constitutes building construction. Erection of boundary walls of a building will be taken as part of building construction.

- 2.3.5 Type of structure : Pucca, Semi-pucca and Katcha : A pucca building is one whose walls and roof at least are made of "pucca" materials. (Pucca materials are : oven-burnt bricks, stone, cement, concrete, jack-board, tiles and timber; corrugated iron or asbestos sheets used for roofing are also treated as pucca). A kutchha building is one which has both walls and roofs made of non-pucca materials. A semi-pucca structure is one which is neither purely pucca nor purely katcha.
- 2.3.6 Owner (of a construction work) is an individual, agency or collective body on whose account the construction is carried out. Such an individual or agency will be considered the owner of the construction while the construction is on-going. For instance, in the case of a housing cooperative society constructing a block of flats which will be subsequently handed over to the members, the society will be considered as the owner at the time of construction even though the individual members of the society will be the owners after the flats are handed over.
- 2.3.7 Date of commencement of construction : Construction is commenced when the first physical operation such as site preparation, delivery of materials and equipment at the site, start of excavation or laying of foundation after the planning and designing is completed. If there are breaks in construction work, this will relate to the date of first starting.
- 2.3.8 Completion of construction : A building construction will be regarded as completed if it is considered by the owner to be ready for first occupation.
- 2.3.9 Expenditure on construction during last year : This is the cost of construction incurred during the reference period of 365 days preceding the date of survey which includes (i) materials used (ii) wages payable to the labour engaged and (iii) the charges payable for the services used. The expenditure will relate only to the items and amount actually used in the construction work during the reference period. Any item of expenditure on materials, labour and services etc., purchased/hired or procured otherwise but not used in the construction is not included in this.

Materials might have been purchased on cash or credit, obtained from home, received as gift or free collections, Materials received as gift were evaluated at current market prices and those supplied from home production, at "ex-farm" or "ex-factory" rates. For materials obtained as free collection, only transport charges and other incidental charges were taken into account. (Evaluation of any used material used for construction was based on the current market price of such items; but expenditure on used materials was not included in the total expenditure).

2.3.10 Source of finance : Source of finance procured for construction consists of (i) borrowing from employer (ii) borrowing from other sources and (iii) other sources (which are not borrowing) Other sources include savings, pension, gratuity, provident fund, inherited wealth, subsidy and grants, gifts etc. In the case of borrowings, the total amount of loan used or intended to be used for the construction work was taken into account irrespective of whether all of it has been used or not. In the case of other sources (saving, etc.) only the amount actually used was considered. Finance for purchase of land was not included in this item.

CHARACTERISTICS OF SANCTIONS LISTED AND SELECTED

2.4.1 Table (1) gives the distribution of sample towns and average number of sanctions issued per month by size class of town and month prior to date of listing.

Table (1) : Distribution of sample towns surveyed (N) and average number of sanctions issued per month(x) by prior to listing and size class of town

month prior to listing	population size class (1971 census)							
	1 lakh and above		50,000-99,999		20,000-49,999		below 20,000	
	N	X	N	X	N	X	N	X
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6	141	76	100	23	150	13	163	5
12		66		22		9		4
28		67		19		10		3
44		50		17		8		3

2.4.2 Table (2) gives the distribution of sanctions listed by type of construction.

Table (2) : Distribution of sanctions listed by type of construction.

srl. no.	type of construction	number of sanctions listed
(1)	(2)	(3)
1	new buildings	38,439
2.	additions, alterations and improvements	12,558
3.	non-building constructions	1,848
4.	t o t a l	52,845

2.4.3 Table (3) gives the distribution of sanctions listed by ownership type :

srl. no.	ownership type	number of sanctions listed
(1)	(2)	(3)
1.	households	49,915
2.	non-household institutions other than housing cooperatives and public and corporate sectors	1,314
3.	housing co-operatives	492
4.	private corporate sector	392
5.	public sector	732
6.	t o t a l	52,845

The above table shows that an over whelming majority of the sanctions are issued to households. The state-wise figures (not included in this report) shows that the co-operative movement in househ construction had taken roots, at the time of this survey, only in Gujarat and Maharashtra and in a small measure in Tamilnadu and West Bengal. And in these states, the co-operative movement is mostly confined to class-I towns and cities.

2.4.4 Table (4) gives the distribution of sample sanctions selected and surveyed :-

Table (4) : Distribution of sample sanctions selected and surveyed by size class of town and month before listing

month prior to listing	population size class of town									
	1 lakh or more		50,000-		20,000-		below 20,000		total	
	sel- ected	sur- veyed	sel- ected	sur- veyed	sel- ected	sur- veyed	sel- ected	sur- veyed	sel- ected	sur- veyed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
6	2128	1914	1248	1178	978	928	550	502	4904	4522
12	2119	1961	1211	1123	845	788	499	441	4674	4313
28	2150	1937	1118	1012	836	771	472	452	4576	4172
44	1967	1814	1031	951	770	710	359	336	4127	3811
total	8364	7626	4608	4264	3429	3197	1380	1731	18281	16818

2.4.5 Out of a total of 18281 sample sanction selected, only 16818 could be surveyed. The casualty rate (about 8%) is higher than that usually observed in the NSS socio-economic surveys.

DISTRIBUTION OF SANCTIONS BY STAGE OF CONSTRUCTION

2.5.1 In block 3 of schedule 1.4 information on proportion of work completed as on the date of survey (block 5, item 9) and the same carried out during one year preceding the date of survey (item 10) has been collected. Using this the sample sanctions can be classified by the proportion of work completed.

This, tabulated by month prior to listing, would give a very important indication relevant to the main purpose of the survey, viz. testing the utility of sanction lists as a sampling frame.

2.5.2 Table (5) gives the distribution of sample sanctions by stage of work for each population size class of town and month prior of listing.

Table (5) : Distribution of sample sanctions by stage of progress of work for each population size class and month of sanction : All states

population class	month prior to listing	proportion of work completed one year before the date of survey			work started during last year	work not started	total
		100%	50% - 100%	less than 50%			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1 lakh and above	6	2.78	3.16	4.55	64.41	25.09	100.00
	12	13.31	7.12	11.10	51.69	16.76	100.00
	28	45.92	18.92	12.32	11.82	11.02	100.00
	44	62.15	13.16	6.93	8.19	9.57	100.00
50,000 - 99,999	6	1.90	2.26	2.80	69.47	23.57	100.00
	12	5.99	4.73	6.67	65.22	17.39	100.00
	28	57.28	15.53	8.74	8.74	9.71	100.00
	44	66.67	12.07	6.55	4.02	10.69	100.00
20,000 - 49,999	6	0.85	2.06	3.14	73.88	20.07	100.00
	12	4.05	2.97	7.69	71.52	13.77	100.00
	28	50.34	15.91	12.03	13.28	8.44	100.00
	44	64.20	12.69	10.27	5.74	7.10	100.00
less than 20,000	6	1.07	1.94	1.94	81.50	13.55	100.00
	12	5.82	2.80	8.84	74.35	8.19	100.00
	28	56.11	15.21	9.23	15.21	4.24	100.00
	44	64.33	12.42	7.01	10.51	5.73	100.00
all classes	6	1.93	2.53	3.47	69.79	22.28	100.00
	12	8.78	5.21	9.03	61.62	15.36	100.00
	28	51.35	17.24	11.14	10.73	9.54	100.00
	44	63.89	12.73	7.48	6.87	9.03	100.00

- 2.5.3 The most important criterion that a list of units should satisfy in order that it can be used as a sampling frame is that it should include all the units of the target population and, ideally, should not contain any other unit ie any extraneous element. In a building construction survey the target population usually consists of all constructions on which some expenditure on construction has been made during a reference period of one year preceding the date of survey, Alternatively, sometimes it may be defined as building constructions completed during the reference period. According to the first definition, the sanctions covered in columns (3) and (7) are extraneous units.
- 2.5.4 The proportion of extraneous units is seen to be more in earlier months 28th and 44th months prior to listing. However, with only the experience of this survey it is difficult to set a cut-off point. For, even among sanctions issued 44 months prior to listing, only about 60% have reported 100% completion of work prior to the reference period. Thus, in order to ensure that all the units of the target population are included in the frame, the listing of sanctions should go well beyond the 44th month before listing. This, obviously, will bring in a large number of extraneous units and thus seriously affect the efficiency of the sample.
- 2.5.5 In some towns there appears to exist a time limit such as two years for the validity of a sanction order, on expiry of which it has to be renewed. Supposing this is strictly followed in the case of all the towns and cities of the country, and assuming that no construction activity takes place without a currently valid sanction order, a list of all sanctions valid at any time during the reference period should include all the target population units without including unduly many extraneous units. It is only hard to believe that such a happy situation exists in all the states and U.T's of Indian Union, However the fact of the situation may be ascertained from official sources.

2.6.1 The following table, Table 6, throws some further light on this aspect.

Table (6) : Percentage distribution of sample sanctions with work started by interval between sanction and commencement of work

months prior to listing	commencement in months after sanction				
	less than 6 months	6-12 months	12-24 months	more than 24 months	all (no. of sample reporting in brackets)
(1)	(2)	(3)	(4)	(5)	(6)
6	90.35	8.53	0.97	0.15	100.00 (3293)
12	80.94	14.40	4.43	0.23	100.00 (3452)
28	80.80	8.24	8.16	2.80	100.00 (3506)
44	82.44	7.85	5.57	4.14	100.00 (3285)
all	83.55	9.78	4.83	1.82	100.00 (13536)

2.6.2 The above table indicates that although in about 80% of the cases reporting commencement of work (67% all surveyed samples) work is started within six months of issue of sanction, in a significant proportion of cases the start of the work is delayed and perhaps not begun at all.

2.7 The above findings clearly show that : (A) for ensuring that all constructions on which some expenditure has been made during the reference period of one year preceding the date of survey are covered in the list frame, original sanctions issued during at least the previous four years or more will have to be listed and (b) if that is done the list will contain about 20% to 50% extraneous units. The situation will be worse if the target population is defined as constructions "completed" during the reference year.

2.8 So far the findings of the survey which have a bearing on the question of the suitability of municipal sanction lists as sampling frame were examined. Now some estimates relating to expenditure on construction, source of finance etc. obtained from the survey may be looked into. The detailed state-wise tables are not given in this report. Some selected estimates extracted from those tables are presented in following paragraphs.

EXPENDITURE ON CONSTRUCTION DURING LAST YEAR

- 2.9.1 State-wise average expenditure on construction under the broad heads of materials, labour and services during the 365 days preceding the date of survey is given in Table (7). The denominators for obtaining these averages are the estimated number of constructions on which some expenditure on construction has been made during the last 365 days (called "eligible constructions" - i.e., members of the usual target population). Column (13) gives the number of sample constructions on which this is based (the total number of sample sanctions surveyed i.e. given in the Annexure).
- 2.9.2 The table shows wide variations not only in the quantity of the materials and labour consumed, but in the effective prices as well over the states and Union Territories. (It may be mentioned here that the estimate of the quantity of bricks consumed in Gujarat seems doubtful).

Table (7) : Average expenditure on materials, labour and services per "eligible" construction during 365 days preceding the date of survey by state/U.T. (all buildings)

srl. no.	state/u.t.	bricks (burnt)		cement		other materials	total materials	labour		servi-ces	total expen-diture	no. of sample constructions
		nos. (00)	value (Rs.)	quintal	Value (Rs.)			(man-days)	(Rs.)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.	Andhra Pradesh	112	943	38	2301	6288	9532	162	1928	318	11778	1291
2.	Assam	120	1821	28	1857	6927	10605	159	2040	50	12695	72
3.	Bihar	127	3364	41	2249	3758	9371	259	2129	272	11771	391
4.	Gujarat	1476	5931	99	4786	19187	29904	388	5318	1702	36924	578
5.	Haryana	135	3017	26	1421	15843	20281	137	2094	365	22740	418
6.	Himachal Pradesh	17	823	164	11392	33430	45645	646	9404	625	55674	38
7.	Jammu & Kashmir	105	3479	25	1604	6740	11823	202	3141	276	15239	148
8.	Karnataka	65	1647	80	4187	20554	26388	619	3300	1536	31224	515
9.	Kerala	135	772	40	2943	10653	14368	148	2875	125	17368	594
10.	Madhya Pradesh	293	2011	30	1804	4927	8742	307	2227	383	11352	*
11.	Maharashtra	376	3968	120	7127	24433	25528	389	7798	6083	49409	813
12.	Manipur	925	14968	67	7669	53578	76215	551	11325	-	87540	8
13.	Meghalaya	238	1295	49	7596	30264	39155	393	6720	476	46351	58
14.	Nagaland	79	3787	30	2042	16849	22678	265	3984	1330	27992	33
15.	Orissa	86	1859	37	2642	4836	9337	282	2546	139	12022	166
16.	Punjab	119	3028	22	1185	3907	8120	112	1367	295	10282	580
17.	Rajasthan	56	1023	14	918	6852	8793	282	3304	415	12512	565
18.	Tamil Nadu	130	2707	62	3672	11116	17495	332	2797	644	20935	1118
19.	Uttar Pradesh	257	4498	36	2128	6497	13123	263	2845	534	16503	1515
20.	West Bengal	123	3626	52	3186	8090	14902	226	2538	303	17743	877
21.	Chandigarh	341	8600	135	16332	23043	47975	546	12486	1076	61537	53
22.	Delhi	320	9495	182	11454	28688	49637	666	7838	2017	59492	72
23.	Goa, Daman & Diu	60	1968	142	6126	18543	26637	307	5081	707	32425	38
24.	Mizoram	9	316	11	630	5892	6838	66	1488	258	8584	18
25.	Pondicherry	363	3826	92	5257	10226	19309	576	5245	679	25233	45

* The figure of number of eligible sample constructions doubtful.

SOURCE OF FINANCE

2.9.3 Table (8) : gives average amount of finance per construction /each by source for/state/U.T. The tables shows that 'other sources' is the major source of finance for building construction. The constitution of loan finance is relatively small in almost all states.

Table (8) : Average amount of finance per building construction by broad source of finance for each state/U.T.

srl. no.	state	average amount of finance(Rs.)				no. of sample construction
		borrowing from employer	borrowing from other sources	other sources	total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Andhra Pradesh	1653	4931	12940	19524	2027
2.	Assam*	-	-	-	-	-
3.	Bihar	1065	5019	13706	19788	391
4.	Gujarat	731	23834	19949	44574	1243
5.	Haryana	955	2545	9180	12680	418
6.	Himalchal Pradesh	933	3660	39400	43993	38
7.	Jammu & Kashmir	1153	3955	19714	24822	148
8.	Karnataka	1587	10076	13151	24814	1358
9.	Kerala	284	8226	11750	20260	1017
10.	Madhya Pradesh	455	3443	9233	13131	1198
11.	Maharashtra	7452	15685	71097	94234	1550
12.	Manipur	13750	-	77470	91220	8
13.	Meghalaya	14449	5913	29909	50270	58
14.	Nagaland	4000	900	27556	28356	33
15.	Orissa	249	2295	12518	15062	166
16.	Punjab	479	2185	13165	15829	580
17.	Rajasthan	446	3024	10661	14131	565
18.	Tamil Nadu*	-	-	-	-	-
19.	Uttar Pradesh	535	3412	17028	20975	1515
20.	West Bengal	1811	5723	12678	20213	877
21.	Chandigarh	12202	15533	25908	53643	53
22.	Delhi	6422	16692	47760	70874	72
23.	Goa, Daman & Diu	537	6204	28450	35191	59
24.	Mizoram	-	-	12007	12007	18
25.	Pondicherry	798	2340	16705	19843	75

* As some discrepancies were detected in the final table estimates are not included in this table.

2.9.4 The data on source of finance given above relate to a wide range of constructions - from those completed a few years ago to those just started or not even started. They do not refer to any well defined reference period either. It will be more meaningful to have this information for constructions completed during the reference year, in which case this can also be related to the total construction cost.

2.10.1 The following two tables, Tables (9) and (10), have been compiled from the marginals of Table 7 state-wise table.

Table (9) : Percentage distribution of completed new building constructions by cost of construction for each state/U.T.

srl. no.	State/ U.T.	cost of construction (Rs.)				all	no. of sample construc- -tions
		less than 5000	5000- 25,000	25,000- 1 lakh	above 1 lakh		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Andhra Pradesh	22.53	39.81	37.66	-	100.00	1110
2.	Assam	15.94	30.08	53.98	-	100.00	53
3.	Bihar	21.21	51.61	26.77	0.41	100.00	96
4.	Gujarat	38.03	34.91	27.06	-	100.00	733
5.	Haryana	14.92	63.75	21.33	-	100.00	187
6.	Himalchal Pr.	-	12.40	87.60	-	100.00	9
7.	Jammu & Kashmir	-	40.09	44.02	5.34	100.00	22
8.	Karnataka	18.77	27.68	53.55	-	100.00	228
9.	Kerala	17.90	27.51	54.59	-	100.00	301
10.	Madhya Pradesh	38.24	42.18	19.58	-	100.00	666
11.	Maharashtra	35.97	33.80	30.23	-	100.00	909
12.	Manipur	-	25.00	75.00	-	100.00	4
13.	Meghalaya	-	30.26	62.07	7.67	100.00	26
14.	Nagaland	-	32.35	67.65	-	100.00	21
15.	Orissa	9.84	42.61	36.07	5.74	100.00	48
16.	Punjab	7.14	53.52	34.70	1.60	100.00	167
17.	Rajasthan	23.85	49.37	23.91	1.65	100.00	154
18.	Tamilnadu	28.48	42.05	29.47	-	100.00	1032
19.	Uttar Pradesh	21.38	50.25	25.90	2.08	100.00	556
20.	West Bengal	9.27	22.37	62.73	3.25	100.00	168
21.	Chandigarh	8.80	5.46	57.30	28.44	100.00	23
22.	Delhi	12.47	11.09	52.49	23.95	100.00	48
23.	Goa, Daman & Diu	-	-	100.00	-	100.00	1
24.	Mizoram	60.00	12.50	27.50	-	100.00	9
25.	Pondicherry	-	-	-	-	-	-

* Includes not recorded cases also.

Table (10) : Percentage distribution of completed new building constructions by plinth area for each state/u.t.

srl. no.	state/u.t.	plinth area (sq. metres)						
		less than 20	20-50	50-100	100-250	250 & above	not recorded	all
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	Andhra Pradesh	4.63	12.90	15.85	12.59	1.94	52.09	100.00
2.	Assam	-	3.44	23.81	20.91	2.01	49.83	100.00
3.	Bihar	15.76	18.38	16.30	14.53	20.06	14.97	100.00
4.	Gujarat	10.53	12.23	17.92	6.12	5.34	47.86	100.00
5.	Haryana	11.14	39.22	14.62	18.41	4.08	12.53	100.00
6.	Himachal Pradesh	-	65.65	4.38	8.74	4.38	16.85	100.00
7.	Jammu & Kashmir	10.55	32.56	41.19	15.70	-	-	100.00
8.	Karnataka	28.26	18.56	27.24	19.35	3.71	2.88	100.00
9.	Kerala	9.31	26.18	48.67	7.94	1.60	6.30	100.00
10.	Madhya Pradesh	6.33	11.68	12.59	10.85	4.97	53.58	100.00
11.	Maharashtra	15.39	13.46	13.06	12.46	9.23	36.40	100.00
12.	Manipur	-	-	-	-	-	100.00	100.00
13.	Meghalaya	4.05	3.61	15.72	12.56	40.63	23.43	100.00
14.	Nagaland	47.06	44.12	8.82	-	-	-	100.00
15.	Orissa	20.49	31.14	24.59	4.92	5.74	13.12	100.00
16.	Punjab	3.79	32.37	22.26	23.39	0.60	17.59	100.00
17.	Rajasthan	16.49	25.48	21.03	22.16	3.88	10.96	100.00
18.	Tamilnadu	8.61	21.76	17.72	9.52	4.72	38.12	100.00
19.	Uttar Pradesh	4.96	14.83	23.71	26.30	3.50	26.50	100.00
20.	West Bengal	26.69	22.54	7.71	3.45	5.76	33.85	100.00
21.	Chandigarh	33.76	36.79	29.45	-	-	-	100.00
22.	Delhi	9.46	11.14	20.14	31.44	7.27	20.55	100.00
23.	Goa, Daman & Diu	-	-	-	100.00	-	-	100.00
24.	Mizoram	-	-	-	-	-	100.00	100.00
25.	Pondicherry	-	-	-	-	-	-	-

2.10.2 These two tables give the picture relating to roughly four years preceding the survey period of 35th round i.e. 1976-80. The tables are self explanatory. The high proportions of "not recorded" cases in Table (10) limit its utility.

CHAPTER : THREE

CONCLUSIONS

- 3.1 The main objective of the survey was to assess the utility of municipal sanction lists as sampling frame for construction surveys. The results discussed in the previous chapter seem to indicate their unsuitability for this purpose, at least in the form in which they are maintained now. The main drawback of these lists is the absence of information regarding completion of work. If dependable information on date of completion was available, it would be possible to prepare a list of sanctioned buildings whose construction has either been completed sometime during the reference period or not yet completed. Such list then will cover all the units of the target population, though it may include some extraneous units (those on which construction work has not yet started and may never be). Of course, to prepare such a list one may have to run through the lists of the past many years; but the final list would include nearly all relevant units and not many extraneous ones.
- 3.2 Another difficulty of using them for sampling is that in many towns, sanction is required only for new buildings and not for additions, alterations and improvements. But this forms a significant part of total construction activity and hence cannot be ignored.
- 3.3 There is also the problem of smaller towns where there is as yet no system of sanction. This part of the urban sector will have to be covered along with the rural areas.
- 3.4 Apart from all these, there is of course the serious problem of unauthorised constructions, which can never be netted through municipal sanctions. The proportion of unauthorised constructions to total constructions is not known and admittedly is difficult to know. (An attempt, however, has been made in the tabulation plan of Scheme A to obtain a dimensional idea of its incidence). However it is perhaps not negligible.
- 3.5 Thus it appears that the municipal sanction lists cannot serve as a good list frame for building construction surveys. However, they can still be used for identifying areas (wards, for example) of concentration of construction activity as done in the earlier survey on Investment and Financing of Building Construction in urban areas.

3.6 Results of Scheme A can throw some light on how effective a general purpose sample of blocks is in netting units of the target population, in the urban areas.

3.7 In the light of the experience gained from the present survey as well as earlier NSS surveys on this subject, some proposals regarding the organisation of construction surveys in NSS may be put forward. A reasonably good feasible strategy for collecting data on building construction in the household sector seems to be as follows :-

I A comprehensive survey on investment and financing of building construction may be carried out once in five years. While in the rural sector this may be integrated with a socio-economic round of NSS, in the urban sector this may be carried out in a special sample of towns as done earlier. In this survey, information on expenditure on construction during last year will be collected from all samples, and total expenditure since start as well as sources of total finance will be collected from samples which have been "completed" during the reference period. It may be desirable to have these two types of unit as separate sub-strata to ensure sufficient sample size for each. Tabulation may be done by more or less detailed classes of type of structure.

II. In the inter-survey years, a count of building constructions :
(a) on which some construction was done during last year and (b) completed during last year may be obtained through the listing schedule, say every alternate year. This count may also be taken with sufficient details with regard to type of structure, so that the averages obtained from the detailed bench mark survey can be applied separately for each of such class.

3.8 Such a scheme it would seem, will be able to satisfy the requirements of the three major users of data on building construction, without being unduly ambitious or expensive. The five-yearly surveys will be able to generate data required for NBO on investment and financing of building construction. The annual or biennial surveys along with the ratios and averages obtained from the preceding quinquennial survey will be able to provide data on yearly expenditure on capital formation in building construction in the household sector for use by the CSO. It can also provide direct estimates of annual addition to housing stock by type of structure as required by NBO. Planning Commission may also use these estimates in whatever manner they would like to use them.

Annexure

Distribution of sample towns and sanctions
selected and surveyed by state/U.T.

srl. no.	state/U.T.	no. of sample towns		no. of sample sanc- tions	
		selected	surveyed	selected	surveyed
(1)	(2)	(3)	(4)	(5)	(6)
1.	Andhra Pradesh	52	50	1864	1762
2.	Assam	13	8	130	117
3.	Bihar	41	27	664	592
4.	Gujarat	41	36	1492	1444
5.	Haryana	13	13	526	473
6.	Himachal Pradesh	5	4	62	48
7.	Jammu & Kashmir	7	7	187	185
8.	Karnataka	45	41	1283	1194
9.	Kerala	22	22	843	806
10.	Madhya Pradesh	47	38	1373	1058
11.	Maharashtra	60	60	1898	1828
12.	Manipur	1	1	11	11
13.	Meghalaya	2	1	60	60
14.	Nagaland	2	2	34	33
15.	Orissa	15	15	269	177
16.	Punjab	21	21	777	738
17.	Rajasthan	30	26	735	692
18.	Tamil Nadu	82	68	2220	2139
19.	Uttar Pradesh	72	61	2049	1970
20.	West Bengal	56	34	1471	1232
21.	Chandigarh	2	2	74	53
22.	Delhi	1	1	100	77
23.	Goa, Daman & Diu	3	3	91	56
24.	Mizoram	2	2	118	18
25.	Pondicherry	3	3	60	59
26.	all-India	644	546	18291	16822

