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#### Introduction

The largest statistical project of the United States is the decennial census. The 1990 Census will account for every person and every housing unit in the 50 States and the District of Columbia as of April 1, 1990. Included as part of the Decennial Census, at least 5 more censuses also are taken in exotic, lush, tropical areas located on the oceans flanking the continent -- the Pacific and the Atlantic Oceans.

The following paragraphs discuss the planning for the censuses of those areas, particularly for the census of housing, and some of the issues addressed during the planning. Data users involved in statistical analysis may find it useful to know some of the decisions taken during this planning and their affect in terms of comparability of the census data for those areas and the states' data.

#### Historical Background

The Constitution of the United States specifies that a census counting the population shall be taken every ten years. The first enumeration began on the first Monday in August 1790.

From 1790 to 1930 the housing data collected were generally limited to one or two items. A Public Law in 1939 authorized the Bureau of the Census,<sup>1</sup> in connection with the 1940 Census, "to obtain data on characteristics of the Nation's housing supply and occupancy. This became the first census on housing."<sup>2</sup> Further legislation was required for the 1950 Census and subsequent censuses.

In August 13, 1954, the various Census statutes were consolidated and codified into the U.S.Code as a separate title--Title 13. Since then, under the provisions of this Title 13, as amended, the Census Bureau takes, compiles, and publishes the various censuses authorized by the Title.

Title 13<sup>3</sup> identifies the geographic scope of the censuses to comprise:

... each State, the District of Columbia, the Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands, and the Commonwealth of Puerto Rico, and as may be determined by the Secretary [of Commerce], such other possessions and areas over which the United States exercises jurisdiction, control, or sovereignty.

Inclusion of other areas over which the United States exercises jurisdiction or control shall be subject to the concurrence of the Secretary of State.<sup>4</sup>

This expanded scope reflects the Nation's recognition of its responsibilities towards the peoples of the non-state areas over which the United States exercises some type of control. In order to establish efficient policies and programs aimed to the specific areas, lawmakers recognized the need for knowledge of the size of the population, their socio-economic characteristics, their housing, and their living conditions.

The Bureau of the Census' mandate was clear; how to best comply with it, was not. A mere count of the population and of their living quarters and their geographical distribution was not enough. The census was to provide data on the characteristics of the people and their housing! While basic demographic characteristics such as sex, age, etc. are common to all people regardless of where in the world they live, on the subject of housing there is no such communality. Where people live, and the characteristics of their living quarters, are a function of cultural patterns, geography, climate, and economic conditions.

It was evident that the Bureau needed to establish a policy on the taking of the decennial censuses of these non-state areas. Should the Bureau interpret the law literally and impose on these areas the same questionnaires, operations, and procedures as those used for the census of the States? This approach would have been the easiest, and most economical, while complying with the letter of the law. However, it would also have been very insensitive of the Bureau to take that approach. The Census Bureau's mission is to ably and objectively "chronicle the Nation's past, describe its present, and illuminate its future."<sup>5</sup> To fulfill this mission, the Census Bureau decided that consideration needed to be given to the specific data needs and to the cultural, linguistic, climatic, political, and developmental differences between these non-state areas, (otherwise referred to as Puerto Rico and the Outlying Areas)<sup>6</sup> and the States.

This decision, while the only correct one from the points of view of the areas and the Bureau's mission, engendered planning for a number of separate censuses as part of the decennial census. Thus it is that, for censuses since the

1960 Census, the Bureau has worked closely with the Governors of the areas and the agency identified by each area as liaison for census purposes. This relationship has proved to be beneficial to the areas as well as to the Bureau. We have become more sensitive and responsive to the individual programmatic data needs and to the culture of each area. Working directly with the people native of the areas has enabled us to plan more efficiently a census that accounts for the specific living conditions found in Puerto Rico and the Outlying Areas.

**The Areas**

To better understand the challenges in planning for the decennial housing census of the non-state areas, we need to identify some basic facts about them.

It is not possible to reflect in this discussion the vast diversity among these fascinating areas. All the areas being islands, possibly their flora and fauna are the basic common characteristics. However, the following discussion will give an idea of some of the factors that guided our planning.

Tables 1 and 2 present 1980 Census data on the number of housing units, the number of persons, and the land area for the United States, Puerto Rico, and the Outlying Areas.

Table 2 - Total Housing Units in the United States, Puerto Rico and the Outlying Areas: 1980

AREA	HOUSING UNITS
Total.....	<u>90,054,421</u>
United States.....	88,411,263
Puerto Rico.....	1,570,907
Outlying Areas:	
U.S. Virgin Islands	33,548
Guam.....	28,249
American Samoa.....	4,728
Northern Mariana Islands.....	3,432
Palau*.....	2,294

\* Included as part of the Census of the Trust Territory of the Pacific Islands, excluding the Northern Mariana Islands.

SOURCE: U.S. Bureau of the Census, 1980 Census of Housing, General Housing Characteristics - HC80-1-A1, HC80-1-A53, HC80-1-A54, HC80-1-A55, HC80-1-A56, HC80-1-A57A, and HC80-1-A57B.

Table 1. **Population, 1960 to 1980, and Area, 1980, of the United States, Puerto Rico, and Outlying Areas**

[For meaning of symbols, see Introduction]

Areas	Population			1980 area			
	1980	1970	1960	Total		Land	
				Square miles	Square kilometers	Square miles	Square kilometers
<b>Total</b> .....	<b>231 106 727</b>	<b>'208 066 557</b>	<b>'183 285 009</b>	<b>3 623 461</b>	<b>9 384 764</b>	<b>3 543 924</b>	<b>9 178 764</b>
United States .....	226 545 805	'203 302 031	179 323 175	3 618 770	9 372 614	3 539 289	9 166 759
Puerto Rico <sup>2</sup> .....	3 196 520	2 712 033	2 349 544	3 515	9 104	3 459	8 959
Outlying areas under United States jurisdiction .....	368 856	'314 657	'237 869	1 176	3 046	1 176	3 046
Territories .....	235 927	'179 519	'123 151	459	1 188	459	1 188
Guam .....	105 979	84 996	67 044	209	541	209	541
Virgin Islands of the United States .....	96 569	62 468	32 099	132	342	132	342
American Samoa .....	32 297	27 159	20 051	77	199	77	199
Midway Islands .....	453	2 220	2 356	2	5	2	5
Wake Island .....	302	1 647	1 097	3	8	3	8
Canton Island and Enderbury Island <sup>3</sup> .....	-	-	320	27	70	27	70
Johnston Atoll <sup>4</sup> .....	327	1 007	156	(?)	(?)	(?)	(?)
Other .....	-	-	-	49	*23	49	*23
Trust Territory of the Pacific Islands, excluding Northern Mariana Islands* ..	<sup>10</sup> 116 149	81 300	<sup>11</sup> 62 434	533	1 381	533	1 381
Northern Mariana Islands .....	16 780	9 640	<sup>18</sup> 290	184	477	184	477
U.S. population abroad <sup>12</sup> .....	995 546	<sup>11</sup> 737 836	<sup>11</sup> 374 421	...	...	...	...
Federal employees .....	562 962	1 114 224	647 730	...	...	...	...
Armed Forces <sup>14</sup> .....	515 408	1 057 776	609 720	...	...	...	...
Civilians <sup>15</sup> .....	47 554	56 448	38 010	...	...	...	...
Dependents of Federal employees <sup>15</sup> .....	432 584	371 366	506 393	...	...	...	...

<sup>1</sup>Includes population of Swan Islands (22) and Canal Zone (44,198). Pursuant to treaty (1972), jurisdiction of the Swan Islands was transferred to the Republic of Honduras. Due to the treaty of 1978, the census is no longer conducted in the Canal Zone.

<sup>2</sup>Includes population of Swan Islands (28), Canal Zone (42,122), and Corn Islands (1,872). Lease (1914) of the Corn Islands from the Republic of Nicaragua has been terminated.

<sup>3</sup>Puerto Rico was ceded to the United States by Spain in 1898. On July 25, 1952, pursuant to acts of Congress, it achieved the political status of the Commonwealth of Puerto Rico.

<sup>4</sup>Includes population of Swan Islands (22 in 1970, 28 in 1960).

<sup>5</sup>Uninhabited in 1980 and 1970; Enderbury Island uninhabited in 1960.

<sup>6</sup>Formerly listed as Johnston Island and Sand Island. Sand Island uninhabited at time of enumeration.

<sup>7</sup>Less than 0.5 square mile (1.3 square kilometers).

<sup>8</sup>Area is for Navassa (2 square miles, 5.2 square kilometers); Baker, Howland, and Jarvis Islands, Kingman Reef (3 square miles, 7.8 square kilometers); and Palmyra Atoll (4 square miles, 10.4 square kilometers); uninhabited at time of enumeration.

<sup>9</sup>Administered by the United States since July 18, 1947, under the United Nations Trusteeship system.

<sup>10</sup>Census conducted September 15, 1980.

<sup>11</sup>From census of 1958 conducted by the Office of the High Commissioner, Trust Territory of the Pacific Islands.

<sup>12</sup>Excludes U.S. citizens temporarily abroad on private business, travel, etc. Such persons were enumerated at their usual place of residence in the United States as absent members of their own households.

<sup>13</sup>Includes U.S. citizens abroad for long periods of time who were not affiliated with the Federal government (1970, 236,336; 1960, 187,834) and crews of U.S. merchant vessels (1970, 15,910; 1960, 32,464).

<sup>14</sup>Based on tabulations provided by Department of Defense.

<sup>15</sup>Based on tabulations provided by the Office of Personnel Management and the Departments of Defense and State in 1980 and on enumeration and tabulations from the Departments of Defense and State in 1970 and 1960.

SOURCE: U. S. Department of Commerce, Bureau of the Census, 1980 Census of Population, General Population Characteristics, U. S. Summary (Washington, DC: 1982)

- Table 1 above shows that Puerto Rico had a population size which was the equivalent to 1.4% the stateside population. American Samoa, Guam, the Northern Mariana Islands, and the Virgin Islands had a population size equivalent to 0.1% the stateside population.
- Table 2 shows that the number of housing units in Puerto Rico was equivalent to about 1.7% the number of housing units state-side, and the total housing units in the Outlying Areas corresponded to 0.08% the States' total.

Other important particulars of the areas include:

- All areas have a warm, moist, tropical climate. Typhoons and hurricanes are frequent natural occurrences.
- While English is widely spoken in all areas, there are language differences among all areas.
- Samoans "cling steadfastly to the Samoan culture and traditions"<sup>7</sup>; Puerto Ricans and Guamanians have much of the Spanish culture; the Chamorro culture is in much evidence in the Northern Mariana Islands and in Guam; and the Virgin Islanders, while distinctly American, reflect the seven different cultures that ruled the islands throughout their history.
- The extended family is prevalent in the Pacific Areas.
- In American Samoa "over 96% of the land is owned communally and is regulated as to occupancy and use by Samoan custom."<sup>8</sup>
- All the areas are islands in transition, with different degrees of economic development.
- The principal resources of the areas are their beauty and their people.

#### Initial Considerations

The above facts pinpointed some specific issues in the basic concepts of census taking, including use of samples, and specific questions to be asked.

1. On the basis of the population and housing size, it is evident that use of sampling in the census would provide housing data with an acceptable degree of reliability only in Puerto Rico. The number of housing units in each of the other areas is too small to obtain data from a sample of housing units with a small sampling error. Thus, we would plan to obtain 100% and sample data for Puerto Rico and 100% data for the Outlying Areas.
2. Because of the tropical climate, data on heating equipment and

fuels would not be needed, but data on air-conditioning and on the presence of a refrigerator should be considered.

3. The warm weather also may preclude the requirement of the presence of piped hot water as one of the criterion for complete plumbing facilities.
4. The need for adequate protection against hurricanes and typhoons may necessitate data on the type of construction materials for roof, walls and foundation.
5. Data may be required on adequate means of communication to alert the population of the eventuality of a natural disaster such as a typhoon.
6. Cultural differences may negate the need for data on living arrangements such as congregate housing.
7. Because of language differences interpreters may be needed in the enumeration of some of the areas. While no specific housing data are required because of this factor, not all English words are translatable in other languages; thus, the wording of the questions and the categories should be clear and simple to facilitate their translation and ensure a correct interpretation.
8. The prevalence of extended families in the Pacific Areas may have particular implications on the data.
9. The social structure of the Samoans -- as reflected by their living arrangements -- may necessitate a different interpretation of the housing unit concept.
10. The communal control of lands and property in American Samoa may require revisions to the questions on property value as well as to questions on real estate taxes.
11. The differences in degree of economic development among the areas may dictate the need for different questions and/or answer categories for the areas.
12. The political expectations of each area may affect their data needs.

The issues identified above set the stage for a dialogue with data users aimed at responding to their expressed programmatic data needs while also providing some degree of comparability with 1990 States' data and the areas' data from previous censuses. Separate meetings were held in each area with Interagency Working Groups established, at the suggestion of the Bureau, to advise the Census Bureau on various aspects of the

census. While the meetings served their purpose well, they resulted in a large number of issues and recommendations, many of them contradictory or not feasible of implementation.

#### Issues and Decisions

1. The very first issue was the definition of a "housing unit". At the beginning of the 1980 enumeration of American Samoa, we received a telephone call from our Census Advisor in American Samoa. Our established census definition for a housing unit could not be applied to all of American Samoa's housing. We had defined a housing unit as a house, an apartment, a group of rooms, or a single room occupied, or intended to be occupied, as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall.

Extended families in American Samoa made use of different types of living arrangements. One type consisted of a number of structures called "fales". Margaret Mead described these fales as a "mere circle of pillars, with floors of coral rubble, no wall except perishable woven blinds which are lowered in bad weather, and a roof of sugar-cane thatch over which it is necessary to bind palm branches in every storm."<sup>9</sup> One of these fales, usually the one in which the "matai" -- the head of the extended family -- lived, had cooking facilities. The meals were prepared in the matai's fale by the members of the extended family. The family members either ate their meals at their own fale or together. The extended family members lived at separate fales close to the matai's fale. Under this arrangement, we decided to treat each individual fale as a room, and all the fales occupied by the extended family constituted one housing unit.

Another type of living arrangement had separate cooking facilities in each fale, but the family members shared a common outdoor oven -- "umu". The family members picked up the cooked food from the umu and finished preparing and eating their meals at their individual fales. As the occupants of each fale used their own cooking facilities to finish preparing their meals and they ate separately from other family members, each fale was considered a separate housing

unit.

Our census liaison in American Samoa advises us that the revisions made to the housing unit definition in 1980 may have resulted in an undercount of housing units. This was discussed at meetings in American Samoa and an analysis of the data<sup>10</sup> seems to support this assumption.

For the 1990 Census of American Samoa, we propose to apply the definition of a housing unit differently from 1980. If the meals are prepared in the fale that has the cooking facilities but the family members eat most of their meals at their own fale, each fale would be considered as a separate housing unit. On the other hand, if the family members eat most of their meals together, then all the fales combined would be considered as one housing unit, and each individual fale as one room. Fales used by the matai to accommodate guests (guest fales) would also be considered to be rooms of the matai's housing unit, regardless of whether they are vacant or occupied at the time of the enumeration. This is consistent with the housing unit definition to be applied stateside in 1990 which is based on whether the occupants live and eat separately.

2. The next important issue was how many of the specific data needs of the areas could be provided. Many different questions may require different questionnaires, different editing procedures, and different programs for the processing and tabulation of the data. All of these differences would result in higher costs for the operations and delays on the availability of census data products.

The Census Bureau had made a commitment to provide 1990 data products earlier than for 1980. To fulfill this goal, we would have to use the least possible number of different census questionnaires that would provide as much of the areas' data needs as possible. We had the various recommendations from the areas; our job now was to use our knowledge of specific facts about each area, together with what the 1980 data told us about the housing of each area at that time, to find ways in which some of the different data needs could be provided with a common question.

This was not an easy task. Various considerations guided our decisions. Foremost was the fact that, for many of these areas, the decennial census is THE data source on which planning for the

decade is based. Current surveys such as the Current Population Survey and the American Housing Survey are nonexistent in these areas. Intercensal data are obtained from very limited locally-sponsored surveys, and are not accepted by Federal agencies for the allocation of programmatic monies.

Thus, the content of the questionnaires should provide the data on which programs' funding would be based, as well as data that would allow comparability with 1980, the States', and the other areas' data. On this aspect of the planning we worked closely with each area's Interagency Working Group. In some instances, it was a frustrating time for everyone involved. How could we arrive at a questionnaire housing content that was responsive to the areas' specific concerns and still be within the constraints imposed on the Bureau by the Office of Management and Budget (regarding respondent burden and programmatic justification of the data), and the existing census budget?

There was much give-and-take involved to accomplish our mission. For instance, when two Pacific Areas identified their need for data on the presence of the individual components of complete plumbing facilities, and the other area recommended using only one question on complete plumbing facilities (similar to the States' version), we decided to ask questions on the separate components for all areas and tabulate the data to provide information on the presence of each component as well as on the presence of all the components (complete plumbing facilities).

The majority rule was not the guiding factor. For example, one Pacific area needed the category "thatch" on the question concerning material used for the roof of the building, and the other two areas recommended its deletion from the question. Our decision was to keep the category in order to provide a uniform question for all three areas.

With the excellent cooperation of the various Interagency Working Groups the decision was made to use:

- One questionnaire for the U.S. Virgin Islands that would resemble the long form stateside version in format and in most of the content

but that also will provide certain data specific to the Virgin Islands' needs;

- One basic questionnaire for the Pacific Areas that would combine some stateside questions, revisions to stateside questions or categories, and specific questions unique to the Pacific Areas. (For American Samoa, this form also would have some differences in answer categories of the questions as well as the omission of items that do not apply to American Samoa.)<sup>11</sup>
- A short form and a long form questionnaire for Puerto Rico, which will be an adaptation of the States' 100% and sample forms, to reflect Puerto Rico's specific data needs.

#### Outlook

With each census, the Census Bureau planners have come to learn more about the areas and their data needs. This recognition of the individuality of each area and of its people has enriched and expanded our outlook toward areas whose stages of development are different from the one stateside.

As these areas continue to evolve and define themselves politically, it is possible that for a future census, say the year 2020 Census, the Bureau's mandate may be different regarding these areas. In the meantime, we continue to meet the challenges of planning for the censuses of Puerto Rico and the Outlying Areas, to get to learn about these charming areas, and to work together with their people in making the decennial census a census for all peoples, a census for all seasons.

#### Footnotes

1. References to "Census Bureau", "Bureau of the Census", and "the Bureau", are used indistinctly throughout this document.

2. U.S., Congress, House, Subcommittee on Housing and Community Development of the Committee on Banking, Currency and Housing, Evolution of Role of the Federal Government in Housing and Community Development: A Chronology of Legislative and Selected Executive Actions, 1892-1974, Committee Print (Washington, D.C.: Government Printing Office, 1976), p. 13.

3. Title 13, Section 191, subchapter V.

4. U.S. Congress, Senate, Committee on Post Office and Civil Service, Title 13, United States Code - Census, Committee Print No. 2 (Washington, D.C.: Government Printing Office, 1977), sec. 191(a).

5. U.S. Department of Commerce, Bureau of the Census, Strategic Planning Committee, Strategic Planning for the Census Bureau and the Initial Strategic Plan (Washington, D.C. October, 1985).

6. Also referred to throughout this document as "the areas".

7. U.S. Department of the Interior, Office of the Secretary, American Samoa (Washington, D.C. n.d.).

8. Ibid.

9. Margaret Mead, Coming of Age in Samoa, (Morrow Quill Paperbacks, 1961), pp. 10 and 266.

10. U.S. Department of Commerce, Bureau of the Census, Trip Report by Leonard J. Norry, September 13, 1988, p. 2.

11. If the Department of State determines that a census should be taken in Palau in 1990, the Guam questionnaire version also would be used for the enumeration of Palau.