

AGENCY FOR INTERNATIONAL DEVELOPMENT WASHINGTON, D. C. 20523 BIBLIOGRAPHIC INPUT SHEET	FOR AID USE ONLY
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1. SUBJECT CLASSIFICATION	A. PRIMARY ECONOMICS
	B. SECONDARY AGRICULTURAL ECONOMICS

2. TITLE AND SUBTITLE
DRAFT PROPOSAL FOR AN AGRICULTURAL SECTOR SIMULATION LIBRARY

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4. DOCUMENT DATE OCTOBER 1972	5. NUMBER OF PAGES 22 PAGES	6. ARC NUMBER ARC 026.63-7151
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7. REFERENCE ORGANIZATION NAME AND ADDRESS
**MICHIGAN STATE UNIVERSITY
 DEPT. OF AGRIC. ECONOMICS
 EAST LANSING, MICHIGAN 48824**

8. SUPPLEMENTARY NOTES (*Sponsoring Organization, Publishers, Availability*)

9. ABSTRACT

The agricultural sector simulation team at Michigan State University has developed and applied the generalized system simulation approach to agricultural sector analysis in Nigeria and Korea. Computerized simulation models have been built and tested for the investigation of one general problem area in two subsectors of the agricultural sector--the low productivity of agricultural resources, primarily land and labor, in livestock and crop production.

The remainder of this paper proposes a method and organization for servicing such applications: a Library of generalized models and components. The next section discusses the kinds of models and components which will stock such a library and the services that can be offered. Succeeding sections describe the management and organization of the proposed library, including its communication with users. Finally, we outline the activities related to setting up and operationalizing the proposed library.

10. CONTROL NUMBER PN-AAA - 885	11. PRICE OF DOCUMENT
12. DESCRIPTORS NIGERIA, KOREA, COMPUTERIZED SIMULATION, MODELS, AGRICULTURAL RESOURCES, LAND, LABOR, LIVESTOCK, EROPS	13. PROJECT NUMBER 931-17-190-533
	14. CONTRACT NUMBER AID/CSD - 2975
	15. TYPE OF DOCUMENT TECHNICAL REPORT

October 1972

**DRAFT PROPOSAL FOR AN
AGRICULTURAL SECTOR SIMULATION LIBRARY**

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Background and Rationale

The agricultural sector simulation team at Michigan State University has developed and applied the generalized system simulation approach to agricultural sector analysis in Nigeria and Korea [1,2]. Computerized simulation models have been built and tested for the investigation of one general problem area in two subsectors of the agricultural sector--the low productivity of agricultural resources, primarily land and labor, in livestock and crop production. In addition, in building these models functional components have been developed which show promise of being generalizable to a broad range of situations. For example, demographic components individually designed to model specific populations of people, trees and cattle may be generalized so that a single component would model any of those three populations as well as any number of others that may be of interest, e.g., tractors, houses, cars, bacteria, insects.

Experience with these models and components has demonstrated the desirability and feasibility of realizing more of the potential of the generalized system simulation approach by broadening its applicability to cover other problems in other subsectors of the agricultural sector in other countries of the developing (or even developed!) world. These would include--in addition to other contributors to agricultural production such as forestry and fisheries--agricultural processing and marketing and non-economic aspects of the agricultural sector such as health and education.

In the long run, applications of the approach may even be expanded further to other sectors of society.

The remainder of this paper proposes a method and organization for servicing such applications: a library of generalized models and components. The next section discusses the kinds of models and components which will stock such a library and the services that can be offered. Succeeding sections describe the management and organization of the proposed library, including its communication with users. Finally, we outline the activities related to setting up and operationalizing the proposed library which can be undertaken under the remaining period of the current contract, AID/csd-2975.

This paper is a draft proposal, so comments, criticisms and ideas are welcome, indeed solicited, from participants, potential users and other interested parties.

Users serviced by the library will include individuals as well as public and private organizations and will fall into two classes. First, individuals and organizations doing teaching or research can use appropriate models and/or components from the library as teaching aids or research tools, both as a part of regular university courses and curricula and in high-level professional training programs conducted by, for example, AID or FAO. The other class of library users includes public and private organizations serving as consultants or contractors to the governments of developing countries and charged to do policy, program and project analyses. The latter class would include, for example, FAO; IBRD; AID; a private company under contract to a foreign government to do an economic and technical feasibility study for the construction of, for example, fertilizer plants in that country; and Oregon State University (recently under contract

to the government of Venezuela to use simulation techniques to investigate cattle production policies).

A centralized library would have many advantages for all such potential users. First, where models or components are needed for a particular application, a central location would simplify the task of finding out whether appropriate models are available or whether it would be necessary to either build them on an ad hoc basis or do without. In this regard, where there is a central repository, duplications of effort in model building can be avoided or at least reduced. Perhaps the largest advantage would derive from a standardization of models and organization. Specifically, models and components can be assured to be linkable with one another as necessary for a particular application, and they will certainly be programmed in the same style and computer language. In addition, the style, format and content of documentation will be standardized as will communication with and distribution to actual and potential users.

With this introduction, let's turn now to a discussion of the scope of the proposed Agricultural Sector Simulation Library: what it will contain and the services it will (or might) offer.

Scope of the Library

The scope of the Agricultural Sector Simulation Library (ASSL) lies in two dimensions: the kinds of models, components and routines it will inventory; and the activities and services it will perform or offer.

Contents of ASSL

The library will stock three categories of computer programs with associated documentations: generalized function-oriented componen

generalized problem-oriented models, and technical routines to assist in building, testing and validating models and components.

Generalized function-oriented components (hereinafter called components) can be defined and developed which would serve in any number of applications. For example, a production component essentially an input/output routine, could be used for the production of fish, livestock, perennial crops, annual crops, industrial goods, and perhaps even public and private services. A single demographic component could model populations of people, cattle, trees, automobiles, and capital goods such as tractors and factories. An accounting component could be designed which would perform industry, sector and national accounting functions. Other components relevant to agricultural sector economic development include processing, marketing, demand, labor migration and resource allocation.

In keeping with the building block approach [1, Chapter 3], such generalized components can be combined to form any number of larger models for use in the investigation of a wide spectrum of specific problems. For example, to look at the problem of low productivity of agricultural resources, we would build a model using a production component, a resource allocation component, an accounting component and a demand component, all linked together with an overall executive program which would generate policy inputs and displays results. In this way, problem-oriented models (hereinafter called models) can be built to examine a wide range of problems in the agricultural sector (or any other sector, for that matter, if so desired).

Problem areas of concern to agricultural sector development may be distinguished in three fields: economic--including resource allocation,

resource productivity, inflation, income distribution, etc.; social--including health care, population, education, housing, law enforcement, etc.; and physical--including power systems, communication systems, public works, etc. These fields are related and, indeed, overlapping, and analysis of a particular problem may require components and models from all of them.

Components may be generalized for wide application or specialized for a particular use. For example, it may be desirable to modify a generalized demographic ^{component} model by including special features and deleting others in order to make it more efficient and relevant for modeling a human population, say. In the same way, a model general enough to be applicable to the study of a particular problem almost anywhere in the developing world may be specialized for use in a specific country or region.

So far, then, we have defined four libraries for ASSL: libraries of generalized and specialized components and libraries of generalized and specialized models. Of course, as new and improved components and models become available, they will join the appropriate libraries, perhaps replacing units already there. Furthermore, as old problems cease to be of concern, certain problem-oriented models may fall into disuse and be retired from the active library, to be replaced by new models designed for new problems. Function-oriented components, on the other hand, wouldn't be subject to this kind of obsolescence.

There is one more library ASSL will contain: a library of technical routines (hereinafter called routines). In building, modifying, testing and validating models and components, there are a number of necessary activities which could be simplified with the aid of computerized routines. For example, routines could conduct sensitivity tests and/or Monte Carlo

analyses on model parameters, perform spectral analyses of simulation-generated data, track the model against recorded time series, and do regression analyses on time series data, where available, to estimate model parameters. Such routines will be useful to users in modifying and specializing library components and models for particular applications, and to model builders in developing new models or updating and testing old ones.

Activities and Services of ASSL

The primary charge of the Agricultural Sector Simulation Library will be the stocking, maintenance and distribution of the libraries of components, models and routines. In performing these functions, ASSL will be responsible for acquiring and testing potential library elements, documenting them and distributing documentations and elements upon request. Distribution procedures and the formats of various kinds of documentations will be discussed later in this paper.

In general, there will be two sources of library components, models and routines (hereinafter collectively called library elements). These sources can best be described relative to the institution housing the library, so let's assume for concreteness that ASSL is located at Michigan State University (MSU). First, library elements may be acquired from outside sources, i.e., in the literature or directly from people in other universities, institutions or agencies who have developed models in support of their *own* research, teaching and/or applied work in agricultural sector development. Secondly, library elements may originate from people doing similar work inside MSU. The difference will be that, while ASSL will be conceptually a distinct unit at MSU, library elements may be built and tested expressly

in direct support of ASSL using other resources of the university or other contractual sources. For example, graduate students in agricultural economics development courses and in applied systems science and simulation courses may elect, as class projects, to fill gaps in the library or to improve upon elements already in the library. Or, funds either from the same contract as ASSL's or from a separate one may be made available specifically to support professional and/or graduate assistant work in developing elements for the library.

In acquiring elements for a particular slot in the library--e.g., a resource allocation component or a validation routine--it will be desirable to actively search out and test alternative candidates from both inside and outside sources. One or more will then be chosen to become part of the library, the appropriate set of documentations will be written, and users will be notified of the changes in, deletions from or additions to the library. Of course, elements entering the library must meet ASSL's criteria for inclusion, discussed in the next section.

The other side of ASSL activities will be servicing users with library elements as requested. As a bare minimum, ASSL will publicize and distribute elements and associated documentations and will keep a file of users' feedback, i.e., reports, results and specialized models and components.

More broadly, however, ASSL could offer consultancy and training services both in support of and supported by its distribution activities. Consultants could be supplied in conjunction with the use of library elements. For example if FAO was investigating agricultural marketing in India, say, a professional (or a team) from ASSL would participate on site in performing, first, a system and problem definition study. He would then

identify components and/or models available from the library which would apply, as well as necessary components the library might not have and would have to be built. The ASSL consultant would assist in modifying, specializing and merging the generalized elements to operate in the particular context of agricultural marketing in India. This would involve model testing and validation using, where available, routines from the library. Finally, he would help define and run policy alternatives and interpret the simulated results. Any given application would require any, all or none of the above consultancy services, depending on the available manpower within FAO (in this case) itself.

If FAO, AID, or the governments of developing countries wished to develop that manpower, ASSL could perform or participate in a training role. For example, if AID wishes to train either its own personnel or, as part of a high-level extension program, foreign nationals, ASSL in conjunction with appropriate academic departments at MSU--e.g., agricultural economics and systems science--could supply its models, components and routines as applied teaching tools. In return, the library could benefit from class projects arising out of the training program (as discussed above in regards to the acquisition of models).

Further discussion of the consultancy and training functions will be discussed as part of the next section on the organization and management of ASSL, to which we now turn. The final section of the paper will suggest the activities in furtherance of the proposed library that may be undertaken under the current contract AID/csd-2975.

Library Management and Organization

The Agricultural Sector Simulation Library (ASSL) will perform a function

similar to that of a book library. It will acquire, store, catalog and provide access to the computer programs which constitute the components, models and routines (collectively called elements) making up the library. The library will neither produce nor use its elements, although it may be closely associated with those who do (as at present at Michigan State University) depending on where it is eventually located.

It is recommended that a standing advisory board be set up to supervise both policy and technical matters. This board would be made up of representatives of individuals and organizations using the library and those producing elements for it. It would make policy regarding the acquisition of models and library use and management. In addition it would oversee the technical procedures of model testing, storage and distribution, and documentation.

In what follows, we shall discuss the management and organization of ASSL in relation to: (1) the criteria for inclusion of elements; (2) the physical storage and distribution of library elements; (3) communication with users, including various types of documentation; and (4) the supporting facilities, activities and associated personnel necessary for the operation of ASSL.

Criteria for Inclusion of Elements

As mentioned in the last section, models, components and routines acquired by ASSL must meet or be modified to meet certain standards before they may be included in the library, documented and distributed to users. The advisory board proposed above may set or assist in setting the specific criteria for inclusion. The standards will relate to language, generality, compatibility, validity, and user orientation.

One standard programming language will be employed--FORTRAN. Primarily, FORTRAN is the most universally used language for research purposes. Furthermore, almost any computer in the world has a FORTRAN compiler, whereas more specialized languages have relatively limited world-wide distribution.

Library elements will also be expected to be applicable to the developing world in general rather than designed for a particular region or country. As the library is used, it will be expanded to include elements originally obtained from it which have been modified for particular applications and then fed back to ASSL from users.

Since models and components will be combined in a variety of ways as required for a given application, these elements--which may have originally been developed independently--will have to be compatible with one another.

Compatibility will be facilitated by the use of ^a common language (discussed above), a standard programming style, clearly specified and compatible inputs and outputs, and documentation explaining how combinations may be made.

Generalized models and components cannot be validated to the extent of faithfully representing a real-world system; that would have to await specific applications. Rather, they are idealized representations of reality whose validity can only be determined with respect to internal logical consistency and conformity with social and economic theory. Representative data, e.g., from FAO's proposed international agricultural data bank, can be used to conduct such tests and validity checks.

Finally, if ASSL is to be used extensively and successfully, its elements and associated documentations must be user oriented; that is, they must be both comprehensible and easy to use. The various forms of

documentation (see below) and the computer program coding must be understandable to the technical or professional level of their respective audiences. Coding should be extensively "commented," variable names should be defined, and the element itself should be complex enough to do its job yet simple enough to be described both verbally and mathematically. Necessary data--initial conditions and system parameters--must be clearly specified and input formats easy to use. Finally, documentations must show how models and components may be combined and used in policy contexts. In particular, the policy maker's access to the model--including policy input and output formats--must be quick and uncomplicated, possibly even allowing man-machine simulations where policies may be changed during the course of a simulation run.

Physical Storage and Distribution of Elements

The primary medium for the storage of the computer programs will be magnetic tapes. One set of tapes will constitute the working master source of all elements in the library. It is from the master tapes that changes--additions, deletions, updating--will be made. To ensure recovery of the library elements in case of loss or damage to the master tapes, up-to-date backup tapes will be maintained and stored in a different location than the master tapes.

The medium for distributing requested elements will be tapes or cards, depending on the requirements of the user's computer installation. In either case, the desired files will be copied--in source code, not object code--from the master tapes to the distribution medium. It will be necessary to have the ability to create distribution tapes and cards in formats and

codes which are compatible, or can be easily made compatible, with user installations.

In addition to the distribution tapes or cards containing requested elements, a distribution package will consist of a FORTRAN listing of the elements included, the necessary user- and programmer-oriented documentation (see below), and in the case of tape a key to accessing the tape. Such a tape key will provide information on: (1) the number and names of files on the tape; (2) the number of logical records in each file; (3) the names of elements included in each file (if elements and files are not identical); (4) tape label (if any); (5) tape density, parity, blocking factor and number of tracks; and (6) the code used in writing on the tape. (The last item will also be necessary information for punched cards.)

User Communication

Effective communication with users will be essential to the success of ASSL. Three types of communication will be necessary: primary communication to disseminate information on the library's offerings of elements and services; secondary communication to enable users to select and implement library elements and services; and tertiary communication as feedback to ASSL on user experiences and results, including reports and specialized models and components.

Primary communication would consist of a descriptive index of library models, components, routines and services, periodically updated and sent to past, present and potential users. The index could also be published from time to time in appropriate professional journals and newsletters. Included with the index will be a standardized order form for ordering the

various kinds of secondary communication on items described in the index.

Secondary communication will consist of three classes of documentation on each of the elements in the library. A computerized information retrieval system could be implemented which would store, update and print out as needed any of the three classes of documentation for any library element. There are document-producing systems available which use the facilities of a computer and allow instant updating without having to rearrange large amounts of text. This system would produce text in upper and lower case given a file of raw text which consists of the unorganized text with control characters interspersed. Once a competent typist learns the techniques of using the control characters, the raw text can be typed into the computer quite rapidly. Specific documentation procedures and formats will be set by the ASSL advisory board.

For each element, Class I documentation will be a non-technical yet thorough description of that element, including a discussion, with examples, of how it could be combined with other elements to answer particular questions or build particular models. Class I documentation will be intended to inform users--both professional consultants (economists, systems scientists, etc.) and ultimate clients (policy makers and public administrators)--of the capabilities and potential applications of library elements.

Class II documentation, on the other hand, will be directed to professional users. A technical and mathematical description of each element will be given and data input requirements will be specified. Class III documentation will provide technical information needed by a computer programmer to implement the element on a computer, including core requirements, reference maps, subroutine call sequences, etc. Both Class II and Class III documentations will be part of the distribution package for each element

(discussed earlier).

Finally, tertiary communication will involve feedback to ASSL from users. ASSL will solicit comments and suggestions concerning its own operation as well as the usefulness of the models, components and routines themselves. In addition, a file of reports will be kept and a library of specialized models and components will be created from modified versions of its own generalized elements. In this way, deficiencies in current elements as well as the need for new elements can be identified, and later applications may use specialized models and components, where appropriate, which have already been built rather than start from scratch or from generalized models and components.

Supporting Facilities, Activities and Personnel

Physically, ASSL will consist of the elemental models, components and routines and three classes of documentation for each element. The facilities necessary to support this physical core of ASSL will include computer hardware and software and a central office.

It will, of course, be essential to have ready access via batch and/or remote terminal to a computer large enough (at least 32,000 words of core) to load likely combinations of library models and components. Since library elements will be stored and manipulated on tapes, tape drives will be necessary. (Cards would be too cumbersome and inefficient; magnetic disks are a possible alternative to tapes.) Also needed will be the capability of creating tapes for distribution to users of any desired density and number of tracks. Software requirements will be: (1) a FORTRAN compiler; (2) an information retrieval system to store, maintain and retrieve the

three classes of documentation for each library element; and (3) utility programs to create, update and otherwise manipulate files on the master tapes, to provide information about those files, and to create distribution tapes.

Office support will include both clerical functions and professional activities. The clerical staff will communicate with and send distribution packages to users, will keep files of such communications, and will prepare and keep files of the library documentations. It will be essential, if ASSL is to remain effective and relevant to users, to keep records of elements users have received from the library, applications and modifications of those elements and reports of user experiences. In addition, as new and improved versions of library elements become available, such records will facilitate sending the new versions to users who have the old ones.

Professional activities will fall into three categories: acquisition of elements, documentation of elements, and performing consultancy and training roles vis-à-vis users.

Although ASSL's functions will not include the initial building and development of models, components and routines, elements will have to be actively sought out and acquired if the library is to remain useful in a changing world. As discussed earlier, acquisitions may come from the literature, from practical work going on elsewhere or, in the case of ASSL's location at MSU, from associated training and applications projects at MSU. The task of ASSL professionals will be to seek out potential elements, test them and (if a decision is made to acquire them) modify them as necessary to meet the library's criteria for inclusion discussed above.

The documentation of library elements will be one of the most important tasks of ASSL professionals. It is only through this medium that elements can be effectively understood, selected and applied by users. Three classes of documentation (discussed above) will be written for each element when it is included in the library, and will be updated as the element is updated.

Finally, ASSL may be given the charge of providing training and consultancy services for users (discussed earlier). These activities aren't essential to the concept of a software library; however, they may be essential for effective use of its elements. These functions, if they are to be a part of ASSL, will be performed by professionals--systems scientists, economists, agriculturalists, computer scientists.

Personnel requirements to operate these facilities and carry out these activities will depend somewhat on the level of demand for library services. In any case, library personnel may be classified as managerial, professional and clerical. Figure 1 shows the relationships between staff and library functions.

The library manager--a full-time position--will be responsible for coordinating the library's activities and maintaining quality control over the models, components and routines in the library and their associated documentations. He will identify needed elements or modifications of elements and will oversee (or do) the researching, testing, reprogramming and documenting of them. He will communicate with users and negotiate with them as to the library services they will use, e.g., consulting or training as well as the use of library elements.

The ASSL professional staff will include both high-level personnel, e.g., agricultural economists, systems scientists and computer scientists;

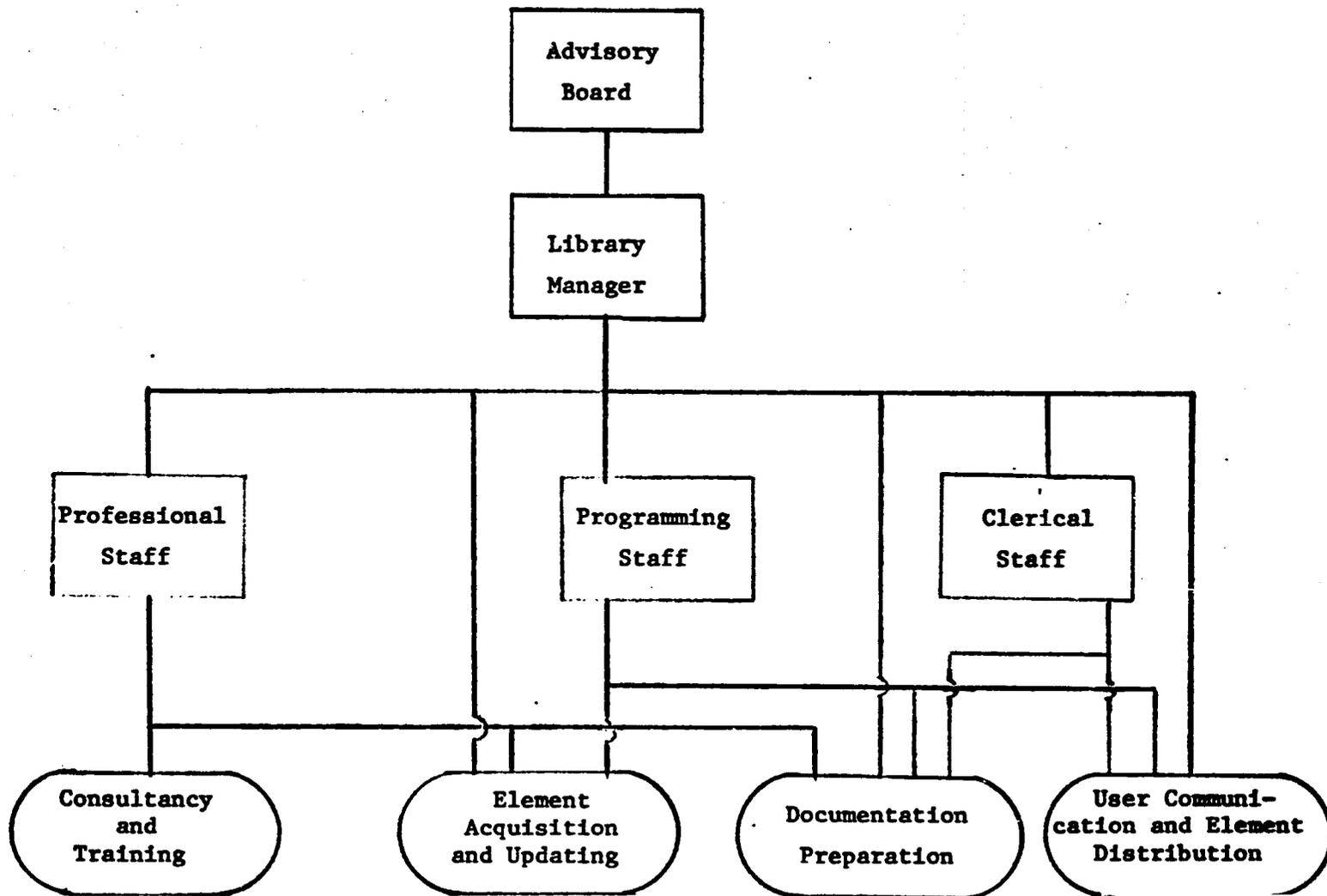


Figure 1. Library personnel and functions.

and middle-level personnel, e.g., computer programmers. High-level professionals will be used on a part-time basis as needed to meet consultancy and training demands and to participate in the researching and testing of elements to be acquired by the library. They will contribute importantly to the Class I and Class II documentation of acquired or updated elements which they have researched and tested. A full-time computer programmer will be required to reprogram acquired elements in the library's standard format, to develop and operate the computerized system of library maintenance and information retrieval, and to prepare distribution packages for users. He will also be expected to write the programmer-oriented Class III documentation. Part-time editorial services may also be desired to review the professionally written documentations and to assure that each class of documentation will be comprehensible to the level of expertise of its intended audience.

As clerical staff, a full-time secretary will be needed to receive user requests for services, to type and send out letters, to type documentations, to send out distribution packages and documentation, and to keep files of communications to and feedback from users.

We have described the ultimate form an Agricultural Sector Simulation Library might take. We turn now to a discussion of how we may get started towards that objective under the remainder of contract AID/csd-2975, i.e., from January 1973 through June 1974.

Initial Implementation of ASSL

The discussion up to here has tried to present a broad, general description of the concept and operation of ASSL. The actual organization, activities, size and institutionalization the library will have in the

long run will be dictated by as yet unmade decisions, both those of the advisory board and those of users demanding library services. This section will suggest the organization and activities of ASSL as it may initially be set up at MSU.

While activities in the immediate future will be financed by 2975, long run funding may come from any one or more of a variety of sources, including AID, FAO, IBRD, private foundations such as Rockefeller or Ford, possibly even foreign governments and other ultimate users. Also, although the library will initially be located at MSU, ultimately it may be moved to a national or international agency or perhaps to a private profit or nonprofit organization. The long-run disposition of ASSL-- both its organization and activities as described in the previous two sections, and its location and sources of support--should be considered in the design and execution of its initial organization and activities.

Thus, one of the first tasks will be to set up the advisory board which will both oversee the initial operation of ASSL as well as plan for its future. The advisory board will be made up of representatives of:

(1) potential users, such as AID, FAO and IBRD; ⁽²⁾ potential eventual supporters, which in some cases may be the same as the users and in others may include foundations such as Rockefeller and Ford; and ⁽³⁾ appropriate disciplines, such as agricultural economics and systems science.

Three ad hoc committees will be created by the advisory board and respectively charged with: (1) designing user communication procedures, i.e., publicizing the library's elements and services via the descriptive index and other means, receiving and processing user requests, and requesting and processing user feedback; (2) designing standardized formats and pro-

cedures for the three classes of documentation; and (3) designing standardized computer programming procedures for, for example, naming variables, defining *common blocks, specifying input/output formats, defining* subroutines, etc. These committees will be made up of advisory board members and MSU professionals and other personnel; the library manager should be a member of each committee.

Until the committees file their reports and the advisory board acts on them (about two months), work can progress in looking at the current models (Nigeria, Korea and Colombia) and breaking and recombining them into generalized problem-oriented models and function-oriented components, with emphasis on the latter. This will include defining elements by intended function and by inputs and outputs. When documentation and programming standards have been set by the advisory board, these elements can then be reprogrammed, the master tapes created and the three classes of documentation written for each element. This process may take at least eight or nine months, maybe longer if the manager is not full time.

As this process is carried out, other activities can be taking place. First, needed elements for acquisition will be identified, and work may begin on developing some of them as part of MSU's educational curriculum. For example, a systems science student may work on a routine which will perform spectral analyses of simulation data. Also at the same time, office procedures, user communication procedures and procedures for the library's use of the computer will be created and operationalized. One outcome of this will be a document describing in detail ASSL's operations, its activities, its organizations, its procedures and its personnel requirements. This will be primarily an "in-house" document but will be essential

if the library moves elsewhere in the future.

In the final nine or ten months of 1975, then--i.e., through June 1974--the library should be in a position to begin responding to requests from foreign governments, international organizations, individual teachers and researchers and other potential users for library services on terms to be decided by the advisory board. Also, as new elements are acquired by the library and/or old ones modified, the master and backup tapes and documentations will be updated.

The resources necessary for the initial implementation of ASSL will include personnel, office equipment and computer facilities and equipment (tapes, etc.). Going into personnel in more detail, first and foremost will be the library manager to coordinate and take responsibility for the library's operation. While a half-time manager may be sufficient initially, the process of getting the library off the ground may be slowed if he is not full time. Aside from the manager, the present 1975 staff will be sufficient to participate in the initialization of the library. The computer programmer will be needed about half time, and the secretary will have only minimal library-related duties until documentation writing and typing and user communications get under way. Professional (systems scientist and agricultural economist) services to define and test generalized elements can be performed on a part time basis as well--perhaps a half-time equivalent.

Citations

- [1] Manetsch, T. J., et al. A Generalized Simulation Approach to Agricultural Sector Analysis With Special Reference to Nigeria. East Lansing: Michigan State University, 1971.
- [2] Rossmiller, G. E., et al. Korean Agricultural Sector Analysis and Recommended Development Strategies 1971-1985. Korean Agricultural Sector Study (KASS) Final Report. East Lansing: Michigan State University, 1972.

Finally, inhibiting housing growth in the Cameroon are construction costs, which are 60% higher than those in Abidjan and Senegal.

2. Implementation: General Considerations

The Housing Policy divides the coordinated low-cost housing program into preliminary actions and financial policies. Suggested preliminary steps are to:

- Treat urban infrastructure as a positive economic investment.
- Develop a new land policy that will assure public control of and adequate revenues from development. Future actions could range from fiscal modifications of the existing system all the way to nationalization of all urban land.
- Update and actualize town plans.
- Clarify respective roles and access to revenues of the national government municipalities.
- Attack high construction costs through research, more use of local materials, development of Cameroonian enterprise without recourse to high-cost expatriate personnel, and prompt payment of public works contracts to reduce contractors' carrying charges.

Suggested changes in financial policy are to:

- Identify clearly the responsibilities of the national government and the municipalities.
- Identify the degree and nature of the national government's financial intervention. Assuming as a basic principle that public subsidy should favor lower-income housing, the subsidy can be limited to lot sizes of 300 square meters and land to that acquired through condemnation. The commission suggests

that for the three lowest cost economic categories the Government contribute the cost of infrastructure and the cost of land acquired through condemnation (for Middle and Super Economic a part of the presumably higher acquisition cost of private land may also be subsidized). Superior economic housing would receive half the cost of infrastructure from the Government but nothing else. Community facilities would, of course, continue to be the responsibility of the respective Ministries, but these could now be constructed with better coordination.

- Undertake complementary measures to encourage private initiative. This could include a stepped-up program of building materials, loans, construction bonuses, contract savings, interest subsidies, employer housing allowance, and housing cooperatives.
- Obtain external financial assistance from International Bank for Reconstruction and Development (IBRD), U. S. Agency for International Development (USAID) and Caisse Centrale de Cooperation Economique (CCCE).

3. Immediate Action Programs

In urban areas, where housing problems are most serious, three programs are proposed. One is a Sites and Services Project with an initial operation of 200 hectares in Douala and Yaounde (5,000 to 6,000 lots in each city), costing a total of CFAF 4.8 billion (\$20 million) of which half is to be sought from foreign assistance.

Another proposal is for slum renovation costing CFAF 280 million (\$1.17 million) a year, (at least half from foreign aid) to create rights-of-way and related infrastructure, particularly public fountains, in densely populated areas of Douala and Yaounde. The Commission recognizes that slum areas have a vitality and often an important economic function that should not be destroyed.

The third suggestion is the publication of a practical construction manual for economic housing.

Rural efforts will be two-pronged. There should be technical assistance for village housing as, for example, the provision of organizers, CINVA ram block presses, and access to construction

materials. At the same time, central villages should be aided through the improvement of such things as public buildings and the water supply.

The Housing Policy also requires institutional development. Since neither the Cameroon Development Bank nor the National Housing Agency is set up to finance and/or administer a substantial sites and services program, it is necessary to create a national para-statal housing bank and sites and services agency for this purpose. Such an institution could be initiated on a pilot basis within SIC in such a way to permit it to be spun off as it developed. The Draft Report suggests an initial capitalization of CFAF 50 million (\$208,000), to be increased ultimately to CFAF 200 million (\$833,000).

4. Financing the New Housing Policy

Based on available data, the costs of implementing the initial sites and services program in the Housing Policy (exclusive of any land acquisition) are given below:

<u>COST OF INITIAL SITES AND SERVICES PROGRAMS (CFAF 000,000)</u>	
Sites and Services (vacant land)	4,800
Services to slum areas	280
Capitalization of new institution	<u>50</u>
Total	5,130 (\$21.4 million)

This represents a hefty increase over the CFAF 150 million a year identified in the Third Plan for "operational town planning" and requires substantial foreign assistance, as the Draft Policy itself recognizes.

III. THE HOUSING SECTOR

A. The Construction Industry

1. Builders and Organization of the Industry

The modern sector of the Cameroonian construction industry is dominated by a half-dozen large general contractors, only two of which are Cameroonians, and a similar group of important subcontractors and suppliers. Some are subsidiaries of European companies others are held by local expatriate interests. They generally have on the order of CFAF 50 to 100 million in capital and handle contracts of CFAF 1 or 2 billion. The annual volume of the modern sector, including public works is approaching CFAF 18 billion and is growing, in constant prices, by about 4% per year.

Housing, however, except for the limited numbers of apartment units, upper income villas, and SIC projects, is almost all constructed either by the owners themselves or on a cooperative basis or by small tacherons (jobbers with limited skills up to basic carpentry) who hire labor and use materials supplied by the owner. Total construction in the popular sector is estimated at CFAF 8 to 9 billion annually and is 55-60% owner-built, according to an analysis by the Laboratoire des Travaux Publics (LTP); see Table 3. for details.

Table 3. Construction 1964-74 (In CFAF Billions)

	1964-65	65-66	66-67	67-68	68-69	69-70	70-71	Proj.73-74
a. Modern sector (inc. public works) in current prices	9.8	12.3	11.4	12.1	13.1	13.8	14.8	18.0
b. Index of construction wages	99.7	100.0	100.0	102.8	106.4	109.0	111.6	20.0
c. Modern sector at constant prices (a ÷ b)	9.8	12.3	11.4	11.8	12.3	12.7	13.3	15.0
d. Popular sector tacheronage	-	-	-	3.1	-	-	-	4.0
e. Popular sector owner-built	-	-	-	4.1	-	-	-	5.0
f. Total Popular Sector (primarily housing)	7.0	7.6	7.6	7.2	7.3	7.5	7.8	9.0
Total construction (c + f)	16.8	19.9	19.0	19.0	19.6	20.2	21.1	24.0

Source: National Accounts, IBRD, and Lab. des T.P.

A middle level of Cameroonian builders with a capability of contracting for small projects or subcontracting on larger jobs has not yet been formed. A few are aided by the Center for Assistance to Small and Medium Sized Enterprises (CAMPE) with support from the UNDP, and the SIC recently let contracts totaling CFAF 40 million to three small builders participating in its Cite Vert program, but the lack of capital and management experience will impede the growth of others.

An extensive site and service program as proposed in the draft National Housing Policy of the Ministry can provide a base for significant development of Cameroonian builders. Numbers of individuals building new homes in a concentrated area will give ambitious tacherons opportunities to secure several jobs at the same time, as many in fact as their particular skills at hiring and managing labor will permit. To be effective in this sense, the site and service program would have to have a building loan component so that owners have the financing to continue construction without interruptions giving tacherons more regular work and broader responsibilities from start to finish of a job. As their volume picks up those with project management skills will begin quantity materials purchasing at which point, to be most effective, builders will need greater access to small business loans for equipment and warehousing facilities.

The 10 to 12,000 serviced sites proposed by the Ministry of Housing would imply, assuming a cost of CFAF 300,000 per unit, CFAF 3.0 to 3.6 billion in housing construction or about one-third of present annual volume in the popular sector. Since most of this would be

construction in place of work that would have been done anyway in uncontrolled settlements, there should be little strain on the the building capacity especially since most of the labor required for this kind of construction is unskilled or semi-skilled with an elastic supply. Even if the entire program were to be regarded as increased production, it would only represent 6 to 8% over present annual levels assuming the lots would be developed over a 3-year period and the houses finished over an additional 2 (total 5-year program). The constraint would more likely be on effective control of construction quality.

The CFAF 4.8 billion estimated by the Ministry for urbanization costs of the proposed program would represent in this case increased production in the modern sector of about 9% over present annual levels if developed over a 3-year period or 5% if developed over a 5-year period. This could be attained without difficulty as enterprises in the modern sector have capital and equipment which is sometimes underutilized. Moreover, those with European connections have access to additional resources and experienced supervisory personnel if needed to keep up with business.

Part of the high costs of construction are certainly due to overhead costs of expatriate builders and suppliers. Working from National Accounts of value-added in the construction industry, statistics of construction wages from the professional association (GICAM) and analysis of cost estimates, the following approximation can be made:

DISTRIBUTION OF COSTS-MODERN SECTOR

Local labor	17%
Expatriate labor	<u>6%</u>
Total labor	23%
Profit and overhead	<u>27%</u>
Total value-added	50%
Materials (see A.3)	<u>50%</u>
	100%

Source: National Accounts, GICAM, and Team estimates.

A study by the SIC indicates that overhead costs are high for several reasons. Public works contracts tend to be irregular and a long time in negotiation and approval. Builders are sometimes working at capacity and idle at other times making efficient programming of personnel, utilization of equipment, and stocking of materials difficult. Operations are therefore more expensive. Payment on public works contracts tends to be slow adding financing costs to the builder's overhead. Spare parts for proper equipment maintenance are hard to obtain. Builders either overequip to avoid being immobilized by breakdowns or have parts air-freighted in at considerable expense. Qualified supervisory personnel are not available locally and must be recruited with expatriate benefits. Cameroonian technicians are more often absorbed by Government service.

Building contracts are awarded on the basis of francophone bidding procedures, but the builder's profit and overhead are usually included in his unit prices and not shown as a separate item. Local practice is to hold back 10% on payments to builder as a warranty escrow, but performance bonds are not common. A 10-year warranty

is purchased by the builder and costs him:

- 1.1% for insurance
- 2.1% for SOCOTEC (inspector)

The industry must eventually be restructured and national programs should be designed to maximize opportunities for local builders. This will, however, take time and Cameroonian builders will encounter some of the same cost problems as expatriates. Most important is to increase the number of qualified builders and step up competition.

2. Labor Supply

While there is no shortage of unskilled and semi-skilled labor or even of masons, carpenters and other tradesmen, there are not enough qualified supervisory personnel such as assistant engineers and foremen. In the past, Europeans often filled these slots. They are now brought in from other West African countries, particularly Senegal and Togo. The sources are limited, however, and builders are sometimes forced to spread themselves thin or to give more responsibility to less experienced men. This is not so much a constraint on the volume as on the quality of the work.

Specialty tradesmen such as those involved in multi-story construction or use of industrialized techniques are also in short supply, but this should not be a problem in the housing sector. Operators of grading and other equipment required for urbanization are generally trained in adequate numbers by builders involved in public works.

3. Availability of Materials

As in the rest of West and Central Africa the costs of materials have risen 30-40% over the last year while troublesome shortages in many areas have begun to develop. This has primarily affected im-

ported materials due to worldwide inflation and shipping increases following the petroleum crisis, but is coupled with dramatic increases in demand from the developing world and slowdowns in supply from the developed. Anti-pollution laws in the U.S. have cut down, for example, on the availability of clinker for cement needs. Production facilities for many materials both in Europe and Africa are becoming outmoded or undersized at a time when financing for new investments is difficult to obtain.

The price of cement in the Cameroon rose by about 25% during the first 6 months of 1974 to CFAF 22,000 a ton at Yaounde (\$3.90 per 94 lb. sack) as opposed to an annual increase of about 5% in prior years. The plant at Bonaberi near Douala is completing an expansion program that more than doubles its capacity to 280,000 tons per year which will satisfy local requirements for the time being. Up to now 135,000 tons per year have been imported from Europe. Cement production relies on imported clinker, however, which has been on short supply this past year and rose 40% in cost in 1974. Gypsum clinker rose 80%. Because of this and the high cost of machinery imported for the plant, cement produced locally is 20% more expensive than that which is imported. Geologic explorations have located workable calcium deposits to replace clinkers and reduce costs, but the investment program necessary to open them has not yet been scheduled. The company, CIMENCAM, is controlled by La Farge International with 43.1% participation by the Societe Nationale d'Investissement of the Government.

A small plant operated by the same company at Feguil using local calcium deposits serves the north of the country where transportation costs are prohibitive. The cost of cement delivered from Douala to Garoua for example is doubled. Production, however, is limited to 28,000 tons, one-third of which is exported to Chad.

Sand and gravel are generally available throughout the country except in the north though their exploitation has not been industrialized. Both Yaounde and Douala have adequate supplies. Costs in Yaounde are on the order of CFAF 1,800/cubic meter (\$5.70/cu.yard) for sand and CFAF 5,000/cubic meter (\$15.90/cu.yard) for medium sized gravel.

Cement block is most often made on the site by the builder but is available from both industrial and artisinale manufacturers in most principal towns. A 10x20x40 cm block will cost CFAF 75 (30¢) from an industrial manufacturer in either Douala or Yaounde while an artisanally made block of the same size but usually an inferior quality will cost CFAF 45 (20¢) in Douala and CFAF 60 (25¢) in Yaounde. It is estimated that over CFAF 6 billion per year is spent on concrete block or one-fourth of the total construction volume.

There is only one manufacturer of fired clay brick, and production capacity is limited to 750,000 bricks. The LTP reports that quality has not been good but is improving. It is hoped that location of clay for other plants will permit competition with concrete block thus lowering the import component in building. Unstabilized earth blocks are used extensively in the north and the Housing Division of the Ministry has purchased a number of CINVA RAM presses, but their use has not yet proven economic due to the high cost of cement.

Wood is abundant, except in the north, though it is not always properly cured or treated. Prices rose 30 to 40%, however, during the first 6 months of 1974 to CFAF 24,000/cubic meter (25¢)per board foot at Yaounde for roof framing material as opposed to average annual increases of 12% over previous years. The cost and difficulties of transport are an important element. Rough cut or split boards are used widely for walls particularly in Douala. Plywood is manufactured at M'Balmayo and also imported from Gabon. Glued shapes are manufactured by the SLAC at Eseka mostly for use in large structures, but the plant could get into industrialized production of housing components. Much needs to be done on the design and detailing of wood, as broader utilization probably offers the greatest long range potential in the area of building materials for economies and import-substitution.

Aluminum roofing is manufactured in good quantity for local consumption as well as export at Edea by SOCATRAL, a subsidiary of the ALUCAM group producing aluminum accounting for 8% of the Cameroon's exports. A thin sheet (26/100 mm) called "super économique" is very popular due to its relatively low price at about CFAF 400 for a 2 mm x 90 cm sheet (10¢ per sq.ft.). Over 4 million square meters of this type alone are sold annually in the country. Another 2 million square meters of better grades up to 6/10 mm are sold. Almost all urban houses are aluminum covered and it is estimated half of the rural area as well. The aluminum roof is rapidly replacing traditional thatch which untreated must be replaced every 3 years or so and is in many areas actually more expensive than aluminum.

The manufacturer is developing shapes to be used on round huts. Fiberglass roofing is also manufactured locally for special uses. Galvanized roofing is imported though it is more expensive and has a shorter life.

About 10,000 tons per year of reinforcing steel is imported. Its price has been rising rapidly to over CFAF 100/kg and stocks are subject to periodic shortages. Some reinforcing is produced in Douala from scrap metal. About 95% of the country's requirements for nails are met this way as well.

Plumbing, sanitary fixtures, electrical supplies, glass, and plastics are imported. Paint and varnish products are now being produced at Douala.

Assuming half the cost of cement is for imported clinker the total import component of modern housing as built by the SIC, for example, can be estimated at 30% of building materials or 15% of the total construction cost as shown below:

DISTRIBUTION OF COSTS-MODERN SECTOR

Imported materials	15%
Local materials	30%
Taxes on imports (clinkers excluded)	5%
Total materials	<u>50%</u>
Labor profit and overhead (See A.1)	<u>50%</u>
	100%

Source: Team estimates based on SIC cost build ups

The import component of traditional and improved constructions is fairly small while that of urbanization is probably somewhat higher. Assuming that the use of local materials is maximized, materials supplies should be able to keep up with industry growth. This will require regular programming however and allowance for continued rise in prices.

4. Building Methods and Costs

High construction costs in the Cameroon are due primarily to the structure of the construction industry and the abnormally high cost of materials, especially cement.

Traditional techniques vary with the region and materials available. Most widespread is a kind of wattle and daub construction. Closely spaced poles are driven into the ground and split wood strips are fastened to them on both sides horizontally with wires forming a remarkably rigid wall lathe which is filled in with mud plaster. The vertical poles are not treated before being put in the ground, but it appears that the rigid lathe is tight enough to work as a continuous surface which would still stand for a considerable time even if weakened by termites at ground level.

In the Douala area where clay is not as good for plaster, a standard wood frame is built again with uprights simply set into the ground and sheathed with wide irregular rough cut boards. Towards the north of the country where wood becomes scarce walls are built of simple mud block reinforced with straw. Roofs even in the north are framed in wood either cut or as poles. In the past they were covered with thatch, but as mentioned earlier, more and more have aluminum even in rural areas. Most houses, particularly in urban areas have cemented floors.

There are some outstanding examples of "architecture without architects" - beehive mud domes, two-story round huts, prefabricated "barn-raising" techniques, and some well planned traditional towns. The quality of popular construction and housing even at more mundane levels is fairly good. Typical costs of a very small house are given in Table 4.

Wattle and daub structures built around Yaounde generally cost about the same, CFAF 200,000 per unit, but are larger - the smallest being about 50 square meters or CFAF 4,000/square meter.

Improvements to these basic structures proposed at the "super-economic" level in the draft Housing Policy of the Ministry are addition of a water point, drainage, and w.c. They estimate this can be done at the minimum size to accommodate Cameroonian families for CFAF 300,000.

Those who can afford slightly more than a minimal shelter build a larger unit with the same basic construction but, adding interior and exterior plastering, false ceilings, and more doors and windows. This corresponds to the Ministry's "middle economic" level which it estimates at CFAF 600,000. Further improvements of the basic construction are better foundations bond beams, full sanitary and electrical installation corresponding to its "equipped economic" level which is estimated at CFAF 1,000,000.

Even the smallest house in "modern" materials is expensive by comparison. The least expensive units built by the SIC are costing CFAF 30,000/square meter (\$12 per sq.ft.) and contracts for the Cile Vert program are an average CFAF 45,000/square meter (\$17.50 per sq.ft.) not including urbanization. These are constructions

Table 4. Cost Build-up
For 30 Square Meter Basic Wood Plank House (Douala)

<u>Cemented floor:</u>	
12 sacks cement at CFAF 1,000	12,000
5 cu. meters sand	10,000
<u>Wall structure:</u>	
75 uprights at CFAF 500	37,500
150 rough cut boards at CFAF 75	11,250
40 kg. nails at CFAF 300	12,000
<u>Roofing:</u>	
30 sheets aluminum at CFAF 400	12,000
4 sheets aluminum peaking at CFAF 250	1,000
2 kg. roofing nails	
50 pieces roof framing at CFAF 500	25,000
3 doors at CFAF 5,000	15,000
2 windows at CFAF 2,500	5,000
Hired laborers	40,000
Entertainment of family helpers	<u>10,000</u>
Total cost CFAF 6,500/square meter (\$2.50/sq ft)	190,000

Source: 1972 ITP study updated by Team estimates

similar to work in other parts of francophone Africa with light foundations; concrete corner columns and bond beams at the top and bottom of 15 cm block walls; floor slab; aluminum roofing; plywood ceilings; plaster; complete electrical and sanitary installations. Technically, both SIC and privately built homes are well done, but a study by the SIC shows that costs are 60% higher in the Cameroon than in the Ivory Coast and Senegal. To provide a comparison, SICOGI and SICAP, housing agencies similar to SIC, were asked to price an 87-square meter model used in the Cameroon. Costs which have gone up 30% in all three countries since the study was made, are given in Table 5.

Construction costs in the Cameroon can be brought down some by closer attention to details and choice of materials, but to achieve additional savings it may be necessary to review design standards. Many of the finishes might, for example, be left to purchasers to complete or improve at a later time as their incomes grow, the emphasis at the beginning being to provide a minimum liveable shell. Units should be designed for easy expansion so that an initially small house is more acceptable. Engineering standards may also have to be reviewed - 15 cm block walls and some of the use of reinforced concrete in single story houses, for example, may be overdesigned.

To the basic construction cost, the SIC adds about 7.5% for other costs of project development:

- 2.5% SIC overhead
- 3.5% architectural fees
- 7.5% construction financing

There are an adequate number of firms in Yaounde and Douala providing architectural design services. Several are competent Cameroonians.

TABLE 5. Cost Comparisons 87 Square Meter Unit - Modern Construction

	<u>Cameroon SIC</u>	<u>Senegal SICAP</u>	<u>Abidjan SICOGI</u>
Earthwork	21,850	20,250	13,160
Foundations	218,282	72,650	101,178
Masonry and Concrete	583,138	266,600	296,930
Roofing	420,000	337,848	302,892
Plaster	360,000	206,930	217,360
Carpentry	187,000	127,850	141,000
Electricity	92,390	41,285	32,000
Plumbing	168,900	141,986	136,625
Sewerage	38,250	23,210	23,620
Painting	<u>92,420</u>	<u>100,035</u>	<u>101,465</u>
Total	2,183,130	1,339,184	1,371,430

Source: SIC

5. Urbanization Costs

The site and service concept proposed in the draft National Housing Policy is appropriate to the Cameroon because of the high costs of urbanization. In fact, there is probably no other way low-income families will get access to planned and serviced communities.

The National Housing Agency has the most recent experience in developing urbanization packages for housing projects. These projects generally have a density of 30 units per hectare on lots of 300 square meters. Their costs run from CFAF 12 million per hectare or CFAF 400,000 per unit for minimally equipped areas to CFAF 18 million per hectare or CFAF 700,000 per unit on higher standard, more spread out developments. The description and cost build up of one of their minimally equipped schemes is detailed in Table 6.

SIC notes that urbanization costs on its projects have been increasing 15% per year. Technically, it will be difficult to bring per hectare costs down. This estimate may, in fact, be low with recent cost increases. Per unit costs could be adjusted, however: designing into the project areas with good access, room for marketing, and surrounding lots zoned for commercial or mixed commercial/residential use that could be charged a higher share of urbanization costs, neighborhood commercial facilities might be built and rental income used to offset urbanization costs. Some larger well placed lots might be included, again at a premium cost. Those with larger lots might be permitted to include with the construction of their homes rooms designed for low income rental purposes (with access to water and sanitary facilities) to offset monthly payments.

TABLE 6, Cost Build Up (Urbanization)

SIC - REGIFERCAM Project - 92 Units; 3.3 Hectares

<u>Roads and grading</u> (CFAF 3.75 million/hectare)	12.4 million
- unpaved laterite streets	
- no sidewalks	
- tamped earth parking areas	
- gravel pedestrian ways	
- earth ditches for surface drainage	
<u>Sewer System</u> (CFAF 4.00 million/hectare)	13.5 million
- collector system	
- house connections	
- community septic tank	
- seepage field	
<u>Water System</u> (CFAF 0.75 million/hectare)	2.5 million
- distribution system	
- house connections	
<u>Electrical System</u> (CFAF 2.00 million/hectare)	7.0 million
- transformer	
- aerial distribution system	
- house connections	
- minimal street lighting	
<u>Other Costs</u> (CFAF 1.50 million/hectare)	
planting for slope protection	1.0 million
contingencies	1.0 million
SIC overhead	<u>2.8 million</u>
Total rounded to CFAF 12 million / hectare (CFAF 400,000/unit)	40 million

Source: SIC

B. Land Tenure Availability and Cost

A new national land policy designed to ensure public control of development, has been prepared by a special subcommission of the Cameroonian government's Housing Policy Commission. The Ministry of Plan is responsible for the group, which includes representatives of the Land Registry Department, the Mayor of Yaounde, the National Housing Agency (SIC) and the Housing Section.

There are three major issues addressed by the subcommission:

1. The basic differences between tenure in the anglophone and francophone parts of the country;
2. The mix of customary and registered ownership which encourages speculation and creates difficult and costly problems of land assemblage for almost any form of development; and
3. The absence of any urban land tax system which would permit the state or municipality to recover from private owners at least part of the increase in land values resulting from public infrastructure improvements.

1. Tenure ^{1/}

In the francophone areas there is a jumbled mix of customary (tribal) lands, rights of occupancy and usufruct of customary lands, provisional ownership pending completion of improvements, and registered fee ownership. Cadastral surveys are undertaken on an ad hoc basis and have not been completed or integrated in most centers; registration of title has been random; and clear title is sometimes difficult to determine, even in Yaounde, and, especially difficult, because of local conditions, in certain neighborhoods of Douala.

^{1/} Since the visit of the Team, GURC has promulgated a new national land tenure law, unifying tenure procedures nationally (and providing for individual fee simple ownership in Anglophone former West Cameroon) and delineating three types of public ownership .

Basic land tenure legislation in the francophone area dates from 1932. One law set up a registry system, similar to that in most of the French colonies; a second law specifically recognized the validity of customary ownership. The legislation was refined in 1963 to define four categories of land: state land, private property, occupied and used customary (tribal) land; and vacant and unowned land (the national collective patrimony).

After World War II, registration of title became more generalized. It was made obligatory in 1966. A 1968 law enunciated the principle that unregistered land, customary or civil, was to be recognized as state property.

Establishment of clear title, both modern and customary, follows essentially the same procedure. First, the claimant produces evidence of effective occupancy and development, together with such evidences of title as he may have. This claim is publicized, including posting the property. If - or, rather, when - other claimants appear, the matter is adjudicated by a special tribune. Title is then registered. The process of registry is long and complicated and may take years, particularly in urban areas as a result of conflicting claims and because of the still indistinct boundaries of customary ownership.

Customary title is certified in the same way as a civil action such as birth or marriage. Even though customary title is not written into the formal real estate registry book, the certificate "fiche d'état civil" serves as recognition of tribal ownership against any private alienation (although not, of course, against condemnation by the state).

Customary title need not be an impediment to development. Recognition of customary title in Douala, for example, has permitted development of a bustling speculative real estate market including leasing, improvement, loans secured by liens, sales and payment of regular fees and commissions to agents for the tribal owners. Where, on the other hand, conflict between customary owners and the government has prevented a clear determination of ownership, investment is inhibited.

Customary lots are irregularly shaped, and often can be quite large. They thus lend themselves to intensive development, and sometimes to mixed use. This contrasts with recent subdivisions, with regularly-sized lots neatly lined up along a rectangular grid.

In the west, where anglophone tenure prevails, the government is considered the owner of urban land and clearly has the right of eminent domain over tribal lands. Property is not alienated; rather the right of usufruct and of occupancy can be granted. Certificates of occupancy and leaseholds were controlled by the Land Survey Department and may be used as security for loans. After the unified constitution was proclaimed in 1972, the Land Survey Department was fragmented into a Survey Department and a Registry Office, as is francophone custom.

2. Transfer Procedures

In the francophone areas private transfer of title can be done by so-called "authenticated act", which is a contract executed in the presence of a notary, who certifies its validity. Customary land also can be transferred in this way, but once transferred it loses its customary status and is registered under a modern title.

Acquisition of fee title from the state is related to completion of a specific improvement, prior to which land is held under a provisional title and right of occupancy, granted by the state. Certification must be obtained from the government (or the city) that the required investment has been made; an administrative action then confirms the title. The actual registry procedure may then take several months. Urban land is given economic zoning, and the value of the required improvement varies. Within urban areas covered by a generalized city plan, the regulations generally require construction in modern materials; the value of an acceptable improvement is usually set at CFAF 3 million (\$12,500). In smaller cities, the value may be set as low as CFAF 1 million (\$4,200). At the other end of the scale, construction of a modern home valued at least at CFAF 5 million (\$20,800) is required before fee title can be delivered to urban lots in a recently subdivided and urbanized Douala neighborhood.

Improvements of this magnitude are beyond the means of 80% of the urban population of Cameroon. The Team was told that in the squatter relocation areas on the outskirts of Yaounde, title can be granted upon completion of a shelter of improved traditional materials costing as little as CFAF 300,000 (\$1,250). However, validity of this title might be questioned once the city plan for Yaounde were expanded to incorporate these squatter resettlement areas. At such time construction in modern materials might be required.

3. Availability

Close-in land is practically unavailable in Douala. In Yaounde, much land is vacant but is held off the market by speculators.

Customary land is available in peripheral areas around Yaounde, and, to a lesser extent, Douala. However, the rights of the customary owners are not clearly defined, and the Government of Cameroon has found condemnation lengthy, costly and politically unrewarding. As a result, the Government has suggested to SIC, the national, para-statal housing authority, that it negotiate for the purchase of the land necessary for new projects. (SIC has completed acquisition of 30 ha. outside Douala and is investigating about eight possible sites, all well outside Yaounde).

At one time the Government granted reserves of land to some municipalities (600 ha. in Yaounde, 120 ha. in Douala, 118 ha. in Ngaoundere), so that relocatees from urban renewal projects might be compensated with free building lots. Urbanisation was to be provided by the municipalities, whose budgets did not permit too intensive an investment. These municipal land reserves have been either distributed or illegally occupied by squatters. Use of available land could be maximized by development of smaller parcels that might be assembled in some pocket areas of Yaounde and Douala.

In Yaounde, where considerable vacant land is being held in close-in areas by some owners, customary land is available only on the outskirts at prices from CFAF 800-1,000 (\$3.30-4.20) per square meter. SIC's land costs for the Cite Verte site just off the main road to the west of town ranged from 400-900 per square meter.

Customary land costs CFAF 2,000 to 6,000 (\$8.30-25) per m² in downtown Douala, a city with a shortage of available land, competition from a growing industrial zone, and a high level of speculative activity. With a minimum lot size of 300 m², land alone would cost from CFAF 600,000 to 1,200,000 (\$2,500-5,000). Customary land on the outskirts costs CFAF 500-1,000 (\$2.10-4.20) per m². Recent acquisition by SIC of a 30 ha. tract outside town cost CFAF 127.5 million, or an average of CFAF 425 (\$1.77) per m².

In Bafoussam, the Team was told, most vacant land within the city limits is in private hands, mostly customary. The official price for raw municipally-owned land has been CFAF 300 per square meter (\$1.25). Customary land is sold at prices ranging upward from this figure, the size of the lot and hence the total price being a function of how much money the seller needs.

C. Community Services

The Government and/or the municipality in the case of Yaounde and Douala, attempt to provide a market, a dispensary, a school, a police station, and a Party hall for each neighborhood.

The Party hall is particularly important in that it provides a community center for social services. The organization is strong and local Party secretaries in addition to serving as social workers and providing counselling services also are used for the organization of self-help neighborhood improvement projects.

The Urban Health Service (Bureau de l'Hygiene Urbaine) is responsible for garbage collection and insect abatement programs. It reports violations to the technical services of the municipality.

In addition to health code enforcement the municipality is responsible for relocation of residents in areas required for public improvements and for development of squatter resettlement zones (zones de recasement). These are neighborhoods subdivided and provided with minimal streets, storm drains, and community water taps where relocatees are assigned to lots.

A strong sense of cooperative community government has developed in many areas sometimes with the help of party cadres or missionaries, sometimes spontaneously. In some of the squatter areas, land has been reclaimed from swamps, streets laid out, and community designed building codes enforced.

In principle, all subdivisions are to follow a set of master plans and zoning regulations for each city. These are badly out of date, however, and difficult to enforce. Regulatory sections of the Ministry of lands and Housing limit enforcement to control of building permits and title registry.

There is no ad valorem property tax. Taxes imposed on income from real estate are listed in Table 7.

Electricity has been provided by three companies now being combined into a National State Corporation. The SNEC provides water in the eastern part of the country, and a system of individual services operates in the west. Installation charges for water are CFAF 40-60,000 per meter, much too high to be supported in a site and service program. One meter could be provided per community and costs prorated to individuals. Electrical installations for 500 Watt service are about CFAF 15,000 and 20-40,000 for greater services. A family with only a few light bulbs will pay about CFAF 600 per month while one using 30 kw of electricity and 10-12 cubic meters of water will have utility bills of CFAF 2,000 per month. 100 kw and 25 cubic meters will cost CFAF 5-6,000 per month.

tration built conditions worse than those found in slums.

At the beginning of the UP Administration, the government was confronted with substantial increases in illegal seizures of land and houses. By November, 1971, MINVU statistics indicated that 26,700 squatter families occupied 47 sites totalling about 1,080 hectares in Santiago alone. During this same period, seizures were escalated to the illegal occupancy of newly completed or partially completed houses and apartments. It was estimated by MINVU that 4,500 units were taken.

The wave of illegal seizures relocated an estimated 145,000 people in Santiago. This produced drastic disruptions in the Popular Savings Plan System procedures by dislocating thousands of families from assigned priority positions and confronting the government with a serious rupture of law and order. Contractors feared that projects would be taken over and housing construction was slowed.

The government reacted to the emergency with remedial measures by assigning slum settlers to sites formerly programmed for Operacion Sitio use. Concurrently, MINVU attempted to regularize the situation by inscribing under the Popular Savings Plan those who had illegally seized houses and apartments. Families with prior claim upon the units occupied were reassigned to other living units, existing or planned.

Despite considerable construction of housing under the Popular Savings Plan by the CD Administration, pressures increased from the masses of people who continued to be inadequately sheltered.

To stem the tide of seizures, the government came out with an emergency housing plan that aimed at more adequate shelter, for the construction of a minimum 36m² houses. (103,000 such units were projected for completion in 14 months).

Measures proposed for implementing the UP Administration housing policies were as follows:

Price ceilings on all locally produced construction materials.

Stimulation of the production and quality improvement of manufactured materials.

Construction materials were to be purchased by MINVU directly from manufacturers and producers so as to lower construction cost and to assure a steady flow of materials. MINVU was to supply materials to contractors and communities from strategically located warehouses.

Reregistry and reclassification of all contractors to serve all Ministries on the basis of new requirements for technical and operational capacity.

A restudy of bidding procedures and criteria for award, discouraging subcontractors and encouraging participation of unions in the production of housing to assure continuous employment.

Establishment of a construction department within MINVU; this organization to form the base of a future state construction corporation.

Establishment of training centers throughout the country to provide workers technical training in the building trades

Emphasis upon research in the housing field as an important activity. This research was to include urban development problems as well as housing technology.

Conduct of a national education campaign to remove prejudices against industrialized or prefabricated houses.

The UP Administration initially had to forego genuine planning in order to concentrate its efforts on meeting the emergency caused by illegal seizures, and to placate the expectations of people who expected the government to provide them with houses immediately. The government later attempted to get land prepared, infrastructure laid, houses and community facilities built.

Of the 103,000 units projected for completion in the first 14 months of the UP Administration, about 80,000 units were started, but only about

28,000 units were actually completed.

C. The National Planning Office

1. Prior Initiatives

ODEPLAN was established by Law 16.635 on July 14, 1967 as a corporate and political body with direct responsibilities to the President for advice on all matters that fall within the responsibilities of the national planning agency. Its role has been and continues to be one of adviser and coordinator vis-a-vis the carrying out of national development plans by the executive agencies of the government.

The structure of Regional Planning Offices (ORPLANES) was established with the following aims and functions in relation to national planning:

- a. Preparation of planning strategies for each development region;
- b. Guidance of national investment policies according to specific location criteria;
- c. Preparation of a regionalized investment budget for the nation;
- d. Evaluation of government investment policy in the regions according to the criteria established in the development strategy of the area;
- e. Improvement of coordination of government programs in the regions; and,
- f. Promotion of local development by private sector.

The ORPLANES maintained close contact with the governors of the respective provinces, serving as their technical secretariat. The governors represented the President of the republic in the provinces and had powers of coordination and guidance.

Under the CD Administration growth pole theories and policies were emphasized in ODEPLAN by the development of a model for creating what was called "integrated economic space", i.e., a planned re-activation of regional economies and the mobilization of potential surpluses which each of the re-

gions of the country was expected to produce from its available natural resources, productive equipment, and labor force.

During the UP Administration plans were developed to stimulate production throughout the country by increasing purchasing power and consumption through support of medium-sized and small producers by more liberal extension of credit (and by improvement in the marketing and price structure of their products) and effecting special and differentiated programs for the various regions.

Both CD and UP leadership recognized that Chile's development had been over-centralized in metropolitan Santiago and that the capital city and its area of influence were disproportionate in relation to the remainder of the country.

The policies adopted by both administrations resulted in some successes and some failures in attempting to close the gap separating levels of development in the different regions of the country and achieving a more balanced growth throughout Chile. The abundance of plans has, in the past, lacked adequate mechanisms for implementation. ODEPLAN's advisory role did not necessarily mesh with individual agency decisions or make possible a general cooperative effort within all sectors of the bureaucracy participating in a national planning system which inevitably imposes restrictions.

2. Present Initiatives.

ODEPLAN has continued to perform its general role of coordinating and advising the various branches of government in the development of long-term national plans and the resolution of pressing economic problems.

ODEPLAN is currently studying the country's capital market to make possible increased savings, promotion of major investments, and the better management of capital resources. It has continued with its work

on defining regional policy. The study of "Extreme Poverty" being completed by ODEPLAN is expected to be useful in making possible the coordination of the various public institutions concerned with planned programs in education, housing, nutrition, and health.

ODEPLAN's experience in regional planning is being utilized in the new initiatives being formulated pursuant to the GOC's regionalization, although the GOC recognizes that it has not yet implemented a complete national planning system. It is the government's view that ODEPLAN should be restructured to assist the government more adequately in its national reconstruction efforts and in the formulation of a new development plan to reflect the numerous changes being contemplated.

Plans for restructuring are under study. Special emphasis is being given to the activities of the Sub-Director of Regional Planning who is concerned with the activities of the regional divisions of the country. Figure 2 shows the regional divisions which incorporate recent revisions. ODEPLAN's organization chart including Sub-Director of Regional Planning is shown in Figure 3.

REGIONAL DIVISIONS OF COUNTRY (FIGURE 2)

(According to Decree No. 575, published July 13, 1974)

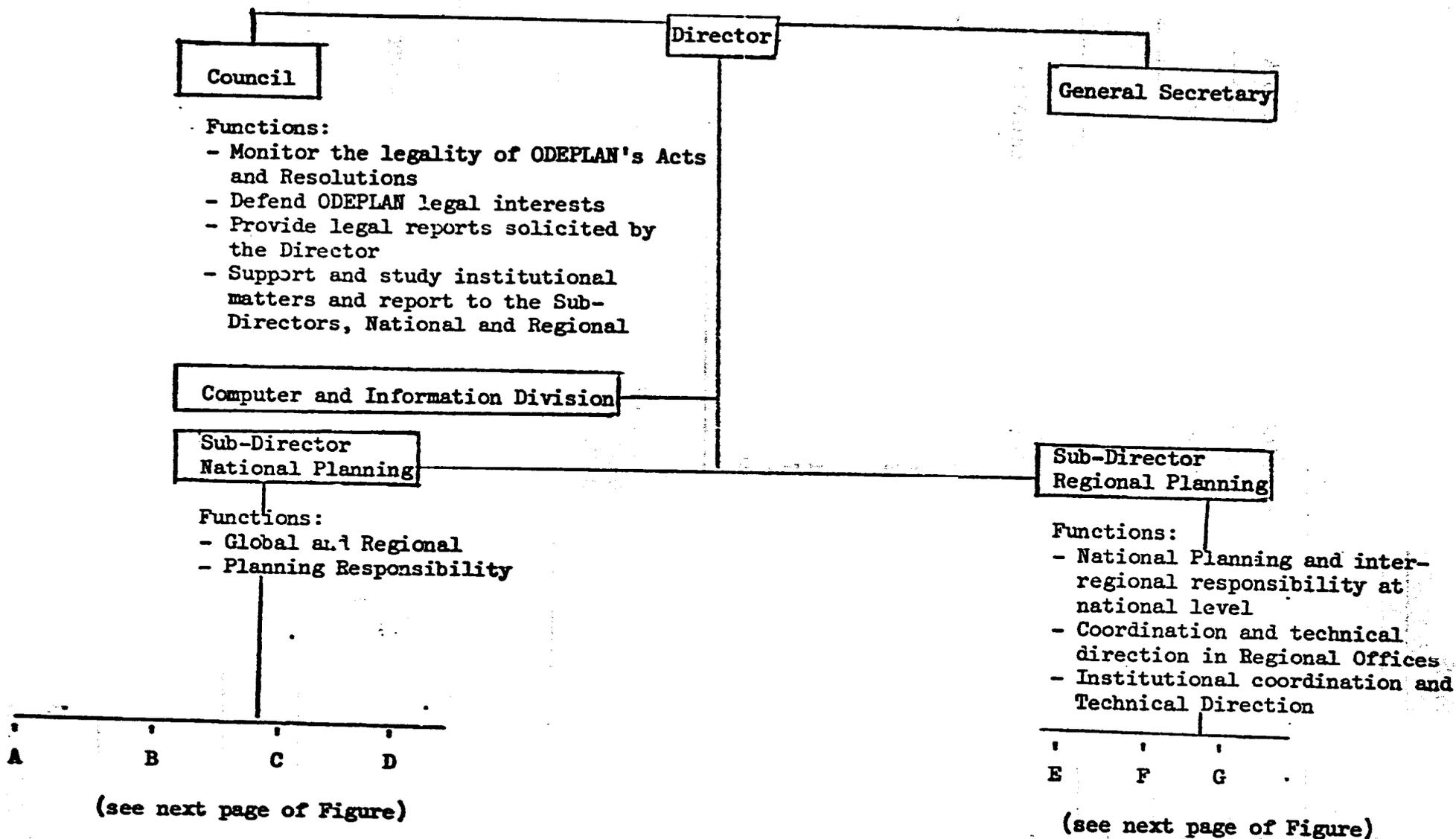
REGION	PROVINCE	CAPITAL OF REGION
I.	TARAPACA	IQUIQUE
II.	ANTOFAGASTA	ANTOFAGASTA
III.	ATACAMA	COPIAPO
IV.	COQUIMBO	LA SERENA
V.	ACONCAGUA VALPARAISO (includes Department of SAN ANTONIO)	VALPARAISO
VI.	O'HIGGINS COLCHAGUA	RANCAGUA
VII.	CURICO TALCA MAULE LITNARES	TALCA
VIII.	NUBLE CONCEPCION ARAUCO BIO-BIO	CONCEPCION
IX.	MALLECO CAUTIN	TEMUCO
X.	VALDIVIA OSORNO LLANQUIHUE CHILOE	PUERTO MONTT
XI.	AYSEN	COYHAIQUE
XII.	MAGALLANES TERRANTARTICO CHILENO	PUNTA ARENAS
METROPOLITAN AREA	SANTIAGO (Excludes Department of SAN ANTONIO)	SANTIAGO

SOURCE: MINVU

ORGANIZATION STRUCTURE OF ODEPLAN FUNCTIONS

Figure 3

46-A



SOURCE: ODEPLAN

A - PLANNING DEPARTMENT

Functions:

- Preparation of the National Plan
- Rationalize the plan in its different levels (National, Sectoral, and Regional)

B - STUDY DEPARTMENT

Functions:

- Promote and coordinate necessary studies and investigations for reforms in the social and economic programs
- Provide the analysis and studies pursuant to the short and long term GOC policies being contemplated
- Prepare monthly economic reports
- Prepare macro-economic projections

C - SOCIAL ACCOUNTING DEPARTMENT

Functions:

- Carry out the national accounting and other systems of social accounting
- Prepare estimates and projections

D - INVESTMENT DEPARTMENT

Functions:

- Design and formulate policies for the assignment of investment resources
- Accomplish work needed for the formulation, coordination, implementation, and control of the interrelated sectoral and regional programs
- Accomplish strategic projects for the national economy

E - REGIONAL POLICIES AND PLAN DIVISION

Functions:

- Collect and propose national policies of regional development applicable to each region
- Determine methodologies for preparation and implementation of regional plans

- Rationalize plans, programs and projects of regional development at global, sectoral, and interregional levels

F - ANALYSIS REGIONAL DIVISION

Functions:

- To collect, process and analyze basic statistical information for regional planning
- To study and propose methodologies to facilitate the regional development

G - ORPLANES

Functions:

- Study, formulate, coordinate and propose regional development plans
- Advise the regional authorities on the regional development tasks
- Coordinate the decentralized instruments of regional development implementation

D. GOC Policy on Regionalization

The GOC's present regionalization program is contained in its Statute of National Regionalization of July 1974. The Statute sets forth the organizational and administrative requirements, and assigns authority and responsibilities under the program. In essence, the program aims to further decentralize administration, population, and productive enterprise. Its stated goals are to:

(a) Balance the development of natural resources with the geographic distribution of population and with national security in a manner that will establish bases for national development of all regions in a context of national integration.

(b) Achieve effective participation of its people in the definition of their own destiny while contributing to the developmental objectives of their region and country.

(c) Establish equal access to the benefits of development in accordance with objectives of the present government.

The statute recognizes that excessive economic concentration in some cities, especially Santiago, is causing large volumes of resources to be diverted to urban works. It is the GOC's premise that these resources could better be invested in productive activities which would generate economic growth and correct regional imbalances more quickly than is the case with urban investments.

Corrective measures are aimed at: (a) a degree of decentralization or deconcentration adequate to facilitate regional progress in the process of national development, (b) effective public-private sector coordination, (c) effective participation of diverse community organizations within a socio-economic framework and in a manner to ensure creative initiatives from

people of all levels, (d) the establishment of fixed territorial boundaries for locations in which public services for respective regions will be combined.

Similar to the organizational milieu put into operation when the ORPLANES were established, a region is headed by an appointed official (Intendente) who carries out the laws as well as the orders and instructions of the Executive Powers. The Intendente is responsible for the execution of the regional development policies and plans of government entities and for promoting in the private sector actions which favor this development. He approves regional public sector budgets and establishes priorities in their programs and specific projects.

Each Region will have a Regional Development Council presided over by the official. The Regional Development Council will participate in the study and approval of development policies and plans and in approving the regional budgets of public sector entities. The members of the Council, in addition to the official will include:

- . The Provincial Governors of the region
- . Two representatives of the municipalities in the region
- . One representative of the Ministry of National Defense
- . The Regional Director of the Development Corporation (CORFO)
- . Representatives of the private sector.

Each region will have a Regional Secretary for Planning and Coordination integrated into the system of national planning, who will serve as advisor and technical officer to the official and to the Regional Development Council.

1. Provinces

The Provincial Governor exercises superior authority in the Province

under supervision of the official of the ORPLAN having jurisdiction of the Province. Provincial Governors are appointed by the President of the country, the official having the privilege to advise on this appointment.

The Provincial Governor has review and approval authority over Provincial development plans, programs and projects. He is also responsible for coordinating public services and private enterprise programs, conferring on such actions with municipalities in his region.

Each Province will have an Advisory Committee presided over by the Provincial Governor. This committee will be made up of persons designated by the Governor.

2. Municipalities

The superior authority of the Municipality is the Mayor (Alcalde) who is appointed by the President of Chile with advice of the official. The Mayor will be supported by a Technical Secretary.

Each municipality will have a Community Development Council presided over by the Mayor. This council will be made up of representatives consisting of the principal officials of the municipality. It will exercise decision-making powers over development policies, plans and programs of the community.

In addition, there will be Community Planning and Coordination Offices which are integrated into the system of national planning and which serve as advisory organs to the Mayor's Technical Secretary and to the Community Development Council.

3. Metropolitan Areas

Provision is made for the definition of metropolitan areas and for special government and administrative bodies for such areas. These bodies will handle comprehensive development planning and will coordinate

investments and services for the metropolitan area.

The form of organization, powers and specific functions of the metropolitan body will be determined by law, as will provisions for the adequate participation of respective municipalities.

Team Comment

In the past, central government agencies have been reluctant to relinquish any significant decision-making power to the regional level. It is too early to determine if the implementation of the regionalization program will be successful. The more highly developed regions will, most likely, be more able to assume the responsibilities of decentralization. The proper mix of centralization and decentralization ideally suited to Chile's present stage of development is difficult to determine. In any event, the program should help to facilitate the decentralization policies of ODEPLAN and MINVU.

B. The Conference on Housing Costs - September 4-6, 1974

The Conference on housing costs was considered important by the GOC to rationalize its planned housing policies. It was recognized that a fundamental need exists for a careful study of all causes that have inflated the cost of housing, if the government's housing and urban development efforts are to be successful. Present housing prices in Chile have reached a level that make it almost impossible for a large majority of families to acquire housing.

A major goal of the Conference was, therefore, to review the factors (such as legal and other regulatory requirements, costs of materials and labor, and financial and other commercial practices affecting housing production), and to recommend changes that can make for more reasonably priced housing and greater production.

It is the GOC's belief that the solution to the problem of housing costs must include, not only the efforts of the public sector, but the participation of all entities that influence, in one way or another, the problems that relate to increases in housing costs. Full GOC support and specifically, the support of MINVU, was given to the initiatives of the private sector (through the Chilean Construction Chamber), which sponsored the Conference. Participants in the Conference included officials from the public sector, contracting firms, industrial firms, building construction unions, cooperatives, universities, professional associations, etc.

Conference committees were set up to meet on the following subjects of concern:

1. Amendment of laws, general construction ordinances and municipal regulations related to housing and urban development.
2. Public utility services; possible revisions in requirements for new projects.
3. Training and improvement of labor.
4. Regulations affecting work contracts, marketing, and tariffs.
5. Taxes and possible exemptions.
6. Housing standards.
7. Costs and production of construction materials.
8. Financing of housing.

MINVU appointed seven study commissions to assist it in carrying out GOC housing policy goals and to utilize, to the extent deemed feasible, the recommendations of the conference committees. These commissions are concerned with the following subject matters:

1. Reorganization of the housing sector.
2. The National Housing Bank (and the financing of home construction).

3. The 5% tax and the participation of the social security funds in housing.
4. Rental legislation.
5. Open corporations and cooperatives for housing.
6. Revisions in SINAP legislation.
7. Land policies.

F. Present Initiatives of MINVU; Principal Targets, Strategy, and Plans: The Establishment of a National Housing Bank

The basic philosophy of MINVU is that families should purchase homes through work, savings, and unsubsidized mortgages. Any subsidies to housing should be temporary and should subsequently be reimbursed. The proposed rental housing program is seen as a transitory phase prior to attaining ownership. Housing should be built by private enterprise.

The paragraphs that follow outline the GOC's housing policy, as expressed by the Minister of Housing.

With respect to housing and its social significance, the housing program is to:

1. Give medium and long-term priority to the construction of housing to meet the needs of low-and middle-income families, i.e., DFL No. 2 housing (140m² or less). It is considered that the minimum size for a single family dwelling should be 70m², a goal which can be achieved in stages by using an expandable system of construction if the buyer lacks sufficient resources for a complete house at the outset.

2. Contribute to the eradication of some of the ills of poverty by means of an emergency program of transition housing (already started) towards eliminating marginal suburban slum areas and shantytowns, within a period of 3 1/2 years. Approximately 140,000 families are presently living under these conditions. Under this program, houses

are at least 40 to 50 m² in size, are to be built within the urban area with urban infrastructure, and, insofar as possible, will be prefabricated. They are to be semi-permanent dwellings built to last from 10 to 15 years, and will be rented to the users who will pay up to 15% of their income, a portion of which will be set aside in savings so that they may purchase housing later, when their financial situation permits.

3. Promote construction of appropriate housing in the asentamientos, (villages organized under Chile's agrarian reform), and other rural sectors, and to attempt to establish villages or settlements that are distributed on a rational basis throughout the country.

4. Include the necessary community facilities for living in the city or in the rural village. For this purpose, the closest liaison is to be maintained among the Ministers of Public Works, Health, Education, Economy, and ODEPLAN.

5. Include an ongoing and intensive program of community education, designed to ensure that neighborhoods and village groups help themselves and progress on their own with the advice and support of municipal governments and related specialized agencies, i.e., the creation of an awareness of the meaning and importance of one's "habitat".

6. Facilitate the purchase of housing through existing channels of credit or create new ones, where payments will depend on the kind of dwelling and on the family income of the buyer. In MINVU's opinion, monthly payments for middle income families can amount to up to 25% of income, while low income families should not pay more than 15% of their monthly family income for housing. It is considered essential that the repayment of mortgage loans maintain the same ratio of debt service to family income through adjustments of monthly payments. This, of course,

makes available greater resources for relending. Adjustments in rental fees according to the same income guidelines are contemplated.

1. Housing and Economic Development

It is recognized that investment in housing generates a broad multiplier effect on the dynamics of the national economy as a whole. To eliminate the historical distortions and lack of national on-going programs which have affected the housing sector, a continually increasing investment by reallocation and reappropriation of GOC resources within the housing sector is being planned in addition to providing measures that encourage an adequate investment flow from private capital sources. The goal is to assure stable employment in the construction industry on the one hand, while ensuring growth construction-related and derivative industries by guaranteeing a permanent market for their production of housing components.

MINVU plans to offer incentives to housing cooperatives and associations and to self-help housing projects. The approval of self-help projects will depend on the organizational abilities of those concerned as well as their adequate provisions for technical and financial support.

Towards closing the housing deficit and to promote construction of low-cost housing, tax exemptions will be used as a stimulus and incentive to the private investor.

While MINVU considers it essential that housing be sold at reasonable values, it expects families to repay their debt service according to income and repayment criteria deemed reasonable. In MINVU's view, this is not presently true. For example, many mortgagors indebted to CORHABIT pay only E* 1500 per month (about \$1.50 as of September 1974). Plans, therefore, are underway in CORHABIT and SINAP to revise homeowner mortgage repayment criteria to provide an adequate return to the mortgagee and to make possible additional funds for relending.

SINAP is expected to provide financing of lower-cost housing for middle-income families. SINAP has been given the task of allocating at least 70%

of its deposits and resources for the next five years--and longer if necessary--to the financing of social interest housing.

A National Housing Bank will be established as an additional channel of financing to supplement those already in existence.

Public and private housing efforts are to be coordinated to make possible a maximum amount of construction from available resources. Projects not meeting the definitions of lower-cost housing will not be entitled to the use of financial resources referred to in this policy.

MINVU recognizes that because of geographical differences within the country, housing construction must be suitable to a given region insofar as design, surface area, and required inputs that are locally available are concerned. In regulating construction requirements, materials and funds that are available locally will be taken into consideration.

2. Housing and Urban Development

MINVU has adopted measures designed to promote the orderly and rational use of existing urban infrastructure, particularly in the major populated areas to:

a. Slow down the horizontal growth of urban centers, and to completely stop horizontal growth as soon as possible. This measure is designed to cut back radically the use of productive--and especially agriculturally productive -- land for housing purposes.

b. Increase housing density up to an optimum level in the urban areas, thus reducing costs by building on already urbanized lots and by utilizing urban infrastructure, all of which will facilitate community development in all of its aspects. Santiago, for example, spreads over 32,000 hectares, an area as large as Paris, but with less than half its population. In MINVU's view, construction of up to four stories, with corresponding open

spaces and community facilities, may well be the best solution for low-cost housing projects.

A rational urban renewal plan for the various urban districts will also be undertaken in order to gradually replace antiquated and obsolete dwellings.

3. Structure of the Housing Sector

To provide the institutional milieu for the design, programming, implementation and supervision, and formulation of enabling legislation required to implement the above indicated plans, the following actions are being taken within the GOC:

a. Existing legislation and regulations will be updated in areas relating to construction and public services.

b. The Ministry of Housing and its corporations will be restructured in order to reorganize its activities on a more efficient basis resulting in better use of human, material, and financial resources. Figure 4 shows MINVU's planned reorganization structure.

c. Decisions adopted by the Government concerning regionalization and administrative decentralization have been made to permit the entire fiscal sector to work efficiently and to give improved guidance to the private sector.

d. MINVU will be solely responsible for setting housing policy, establishing its orientation, and controlling its development and the results achieved.

e. Broad powers and responsibilities will be given to the municipal governments for the programming and implementation of housing and urban development plans, in keeping with regional and provincial programs.

MINVU, through its agencies and regional offices will furnish technical and

financial support and will provide the necessary coordination among all institutions working within the housing sector and other related governmental bodies.

f. The use of new techniques to improve the efficiency of housing construction will be encouraged. Prefabricated housing, both national and foreign, will be encouraged within a framework of free competition.

4. The Establishment of a National Housing Bank

The GOC, in pursuing the creation of a financial institution to promote the construction of housing within the public sector, has stated the following objectives:

a. The institutional separation of financial functions from construction functions towards making for a better utilization of available resources.

b. Coordination of the various socio-economic groups or income levels with adequate financial plans for acquiring housing.

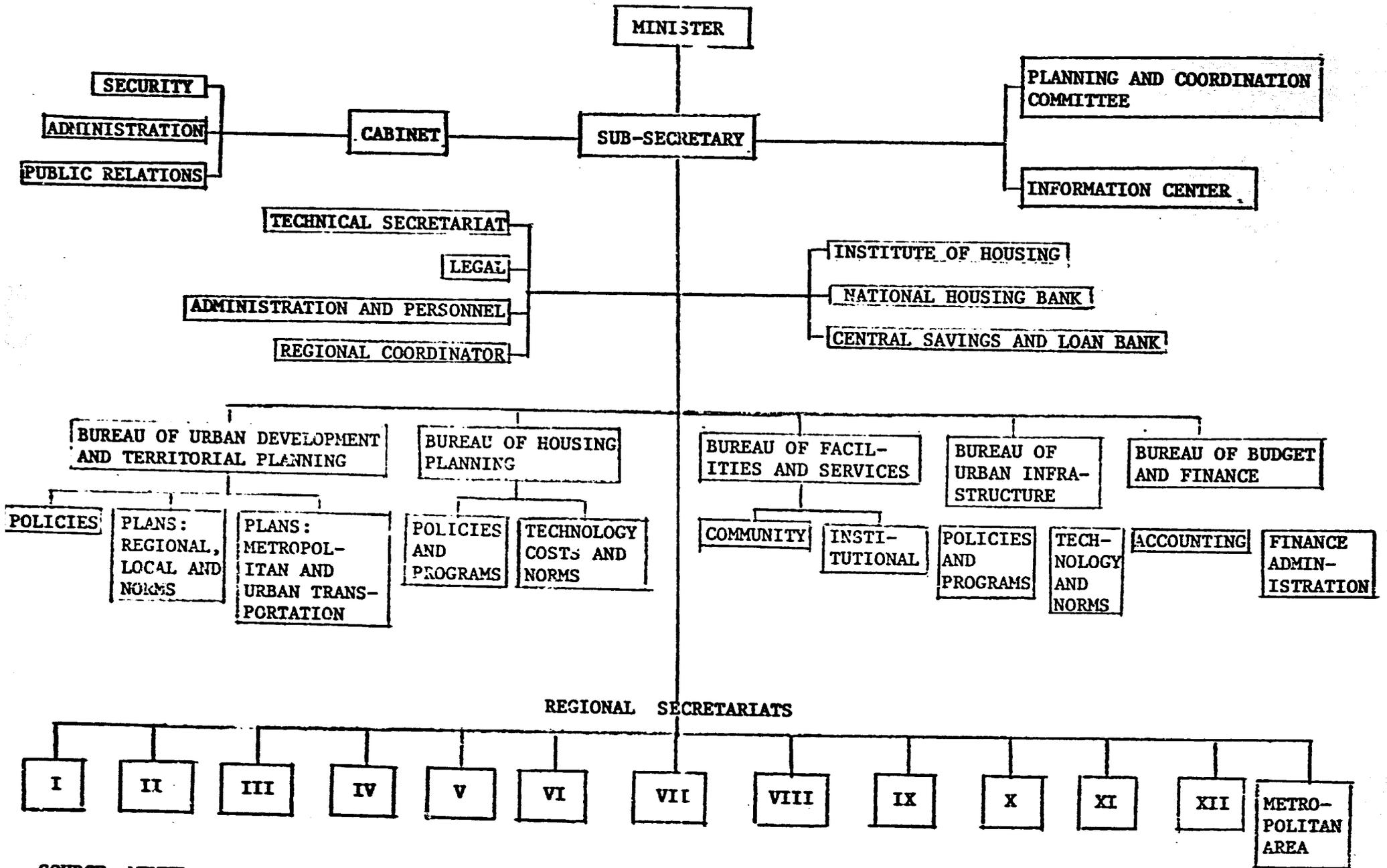
c. Expressing more actively the housing policy of the government through the financing of projects and/or housing programs that will further the needs of those sectors or regions which the government is most interested in promoting.

d. More effective utilization of resources through making available partial financing to intermediate organizations such as corporations, regional corporations for social housing, municipalities, savings and loan associations, etc.

e. The stimulation of savings at all income levels of the population including investors from the financial community.

f. Centralization of public resources from taxes and other fiscal contributions and providing an appropriate vehicle to determine and regulate the annual subsidies considered necessary to implement government housing policy

BASIC STRUCTURE OF THE MINISTRY OF HOUSING AND URBANISM



SOURCE: MINVU

g. Centralization of national and foreign debt for housing.

h. Maintaining the resources coming from the social security system.

i. Active recuperation of mortgage loan debts; centralized supervision of mortgagors and their respective ability to meet the debt service requirements.

To realize the above objectives, the GOC plans to create a national housing bank, whose purpose, administration and resource functions would be geared to promoting the construction of housing units for medium- and low-income families in accordance with the priorities established by MINVU. The bank would (a) stimulate and mobilize savings for housing; (b) promote urbanization, home construction, and community facilities for the development of communities in accordance with the GOC's policies of regional planning; (c) facilitate access to housing to families not capable of acquiring housing under normal market conditions; (d) set forth and enforce policies adequate to assure adequate mortgagor repayment of loans based on prudent underwriting criteria; (e) encourage mortgagor participation in community activities towards resolving, in an organized way, their housing problems.

a. Administration. The bank, as an implementing institution of GOC housing policy under MINVU, would serve as a financial entity charging a fee for services rendered and subject to the economic policies set forth by the government's economic authorities. The bank would be administered by an 11-member board, consisting of representatives from the private sector, MINVU, social security funds, SINAP, Federation of Housing Cooperatives, etc. Three members would be chosen to serve as President, Vice-President, and Secretary General.

The Bank would decentralize its tasks to the various development regions in addition to operating through intermediate entities (public, semi-public or private), which are devoted to the promotion or construction of housing. Resources would be assigned according to the specific merits of a project, to regional priorities, and target income groups agreed to by MINVU.

b. Loan Activity. The bank would grant loans to legal entities, public or private, for the execution and/or acquisition of housing projects of social interest. It would support and collaborate with established organizations who are technically and administratively engaged in providing housing for low-income families and would make loans for the acquisition of materials for self-help construction and the construction of community facilities.

c. Capitalization. The bank's funding is to come from capital contributed by government budgetary allocations, SINAP, the social security system, housing cooperatives, etc., in a manner to be established by the bank's regulations. Additional capitalization of the bank would be provided through savings plans, service fees, issuance of securities, compulsory savings for housing pursuant to special laws that may be established in future, taxes earmarked for housing, internal or external borrowing contracted by the bank, etc.

Team Comment

The Team questions the impact that the National Housing Bank, when established, will have on the capital market in general and specifically the extent of adverse impact it might have on the operations of SINAP. Supposedly, the bank's activities will supplement SINAP activities within their respective market areas. Since the bank's interest rates, types of securities to be issued, and terms of loans to be offered have not yet

been stated, it is too early to suggest possible overlapping and/or competition for savings, sales of securities, and other sources of capital investment now being encouraged through the presently existing financial institutions (savings and loan associations, Banco del Estado, etc.) and the security issues of the Central Bank.

Nevertheless, the concept of a National Housing Bank has considerable merit. Obviously MINVU is aware of the inherent possibilities open to a Chilean National Housing Bank. The activities of such institutions that have been developed in other countries serve to demonstrate what can be done.

The report of a comparative study carried out by the United Nations (Credit Institutions for Local Authorities, UN, New York, 1972), provides one source of information on presently existing credit institutions throughout the world. Generally, such institutions provide services designed to increase the administrative capability of local authorities in the absence of adequate financial, technical, or advisory services by other organizations or agencies. These institutions recognize the interrelationship between the credit worthiness and administrative capability of local authorities.

It is recognized that local governments need social facilities such as schools, housing, hospitals, and recreation areas in addition to basic infrastructure facilities such as streets, transportation, water supply, and sewerage disposal systems, and other utility services. Facilities made available to local authorities for assuming greater responsibilities for planning and administration of community facilities can help mobilize local resources for development, increase government responsiveness to public demands, and lessen overloading.

of central agencies (or act as a counter balance to excessive centralization).

The Brazilian experience with its National Housing Bank is a good example of the overall activities that such an institution can make possible, especially with respect to financing areas of development in addition to housing. Not unlike MINVU's organizational components, the Brazilian Federal Service of Housing and Urbanism (SERFAU), the National Housing Bank (Bank), and the Financial System for Sanitation and Water (SFS), are all within the same Ministry. This has led to an integrated approach to the solution of urban problems and has contributed to the broadening of the Bank's financing, not only for housing but for water supply, sewers, and local planning under major federal loan programs to which the municipalities have access.

The basic scheme under which SFS operates calls for the joint financing of water supply projects by the Brazilian government through the Bank and SFS which contributes 37.5% of the loan. The state government and municipality provide the balance. Interest on the bank loan for water supply is 8% per annum, plus monetary correction payable over a term of up to 18 years. So far, 211 municipalities with a combined urban population of over 27 million have participated in this program. A similar program of loans for sewers is also carried out through SFS.

SERFAU, in developing urbanization policy, finances "plans for integrated local development." A revolving fund for local planning (FIPLAN) operated by SERFAU with resources provided by the Bank, finances the preparation of local development plans.

One of the major housing schemes supported by the Bank is represented by the COHAB's mixed-economy companies created by municipalities and other public agencies for the construction and operation of housing projects. As a mixed company, it can have both public and private capital, but the Bank's regulations require that the public sector own a majority of the capital.

The bank finances the COHABs under the general terms of its housing loans, (monetary correction of debts, 15-year terms, and a limit on the value of the houses or apartments).

G. Social Security

.1. Organization

Social Security was initiated in 1924 but the system is now governed by Law No. 10383 of July 28, 1952 which replaced the former Compulsory Social Security Fund (Caja de Seguro Obligatorio) by a government agency, the Social Security Service (Servicio de Seguro Social). This is financed chiefly by a tax on both employers and workers fixed in proportion to wages, and by Government appropriation. It is compulsory that all workers who earn wages be insured against risks of illness, disability, old age, and death. The Service is responsible for administering the former pension programs and adjustment of rates. In 1953 its functions were expanded to include unemployment benefits and family allowances. Medical services are provided by the National Health Service in the Ministry of Health.

There are about 30 Cajas de Prevision (security funds) constituting this social security system. In all they cover 2.5 million workers or roughly three quarters of the economically active population. The Social Security Service covers all wage earners (obreros) including agricultural and domestic workers and independent manual workers, or about 67 per cent of all insured

persons. Two other organizations, the Private Employees' Welfare Fund (Caja de Prevision de Empleados Particulares) and the National Fund for Public and Newspaper Employees (Caja Nacional de Empleados Publicos y Periodistas), covering employees and civil servants, provide social security for another 19 per cent; three others cover an additional 8 per cent (police, military, and state railway employees); and the other organizations cover the remaining 6 per cent, mostly employees in the private sector.

2. Benefits with Respect to Housing

According to law, at the end of each year, after the payment of pensions, accident benefits and other services, excess funds of the Caja de Prevision are earmarked for housing. Although the Cajas build houses and grant loans to their members for buying them, their funds are limited and one must qualify under a strict point system. To register for a loan, the applicant must meet certain levels of contributions over a specified period of time to the Caja and the applicant must not have participated previously in a public housing loan program. Once registered, the applicant must compete with other applicants under criteria as to the number of years contributions have been made, age, number of dependents, etc.

The Cajas have had three programs for housing loans. One of these has provided funds directly for the construction of houses and apartments through CORVI. As such projects approach completion, the Caja invites its members to register and enter the competition. Competition for these houses has, in the past, been extremely active.

Under another loan program, the Caja can grant loans for the construction of houses on property already owned by applicants. An applicant must show that the lot has been urbanized. If he is successful in the competition - in which, along with the other criteria, he is judged on his previous savings - he can receive a loan of up to the escudo equivalent of about \$10,000 to be used for construction of a house.

A third program can provide up to about \$1,500 towards meeting down payment requirements of any other real estate purchase open to the applicant.

The interest rates on all of the Caja loans are set at substantially below current market rates.

The major difficulty with the Caja source of housing is the deficiency of their financial resources. In practice, a well-endowed Caja, such as the Caja de Prevision de Empleados Particulares (Social Security Fund for White-Collar Workers in Private Enterprise), dominates the program, having built 75 per cent of all the houses constructed with social security funds; while the Caja de Empleados Publicos (Social Security Fund for White-Collar Public Employees) and the Servicio de Seguro Social (the largest Caja, for 'workers' as opposed to white-collar 'employees'), have built about 10 per cent of such houses.

A family with a high competitive rating and a member of the Social Security Fund for White-Collar Workers may have a fair chance of benefitting from this system while chances of a "worker" are slim.

The government presently has under study a number of social security reforms. One such reform would be the creation of mutual social security and savings institutions. These institutions would be responsible not only for the accumulation of reserves (under the social security system), but for the payment of employee severance benefits, retirement pensions, and additional reforms towards redistributing income. New plans for the utilization of social security reserves for housing are being considered.

II. DEMAND FOR SHELTER

A. Population Characteristics*

Except for the Santiago Metropolitan Area, the national population growth ratio for Chile is low relative to most Latin American republics and compares favorably with rates among many industrial countries.

Between 1952 and 1960, the average annual growth rate reported for Chile was 2.6%. Between 1960 and 1970, this declined considerably to an average of 1.9% per annum. During the latter period, the population of the country increased by just 20% from 7,374,000 to 8,835,000 inhabitants.

The Chilean National Census and Statistics Office notes that in 1970 only five cities reported significant numbers of persons outside the city limits, but within the confines of larger urbanized areas. Most of the persons in this category are in fact, residents of sister cities. The five are Greater Santiago, Valparaiso, (including Vina del Mar, Villa Alemana and Quilpue), Concepcion (Talcahuano, Coronel, Lota, Tome and Penco), Antofagasta, and La Serena-Coquimbo. The larger population of each of these urbanized areas is taken into account in the projections and in the analysis that follows.

In an inspection of the two most recent and relatively large-scale mapping series of Chile to evaluate the potential for the development of new urbanized area complexes, it was found that the potential is slight. In the present decade only one, or possibly two, additional cities should begin to engulf neighboring towns.

1. Population Projections

* The information presented herein is based on IDB's Technical Department Report #2, Urban Population Growth in Chile, 1972. In the opinion of IDB's technical department, the use of 1970 preliminary census results in the report is considered sufficiently reliable to suggest that final census results (not yet available), should not require an upward adjustment of more than one or two percent over the preliminary figures.

The population projections summarized in Table 1, Appendix 2, cover 26 urbanized areas of Chile which contained a population in 1960 of 20,000 or more inhabitants. A projected 1970-1980 average annual growth rate of 1.83%* will increase the national population to 10,623,568 by mid-year 1980. By mid-year 1990, a total population of 12,848,859 is projected and a population of 15,358,272 is forecast by the year 2000.

2. Levels of Urbanization

The population of Chile in 1940 was largely located in the rural areas of the country and in small towns. Just 37% of the total population resided in the 17 cities of the country, with more than 20,000 inhabitants** and 7 of every 9 urban residents were in the three largest urban complexes - Santiago, Valparaiso - Vina del Mar, and Concepcion-Talcahuano. By 1960, 10 additional cities had developed. Of the total population, half were residents of the 27 cities.

By 1970, the urban population had increased to 60% of the total population reflecting in part continuing and steady rural migrations to the cities occurring simultaneously with generally low rates of population increase in both the urban and rural sectors. In 1970, 7 of every 9 urban dwellers still resided in the three major urban complexes of the country.

* It is possible that even this rate may be too high by examining recent trends in the crude birth rate. The general trend in the crude birth rate is downward. Allowing for a crude death rate of 8.6 per thousand and discounting the negligible amount of net migration, an even lower population growth rate of 1.6% in Chile for the year 1970 is produced. However, this downward trend which appears to have developed, and any refinements to the national population projections employed in this report will have to await further verification, as related studies not currently at hand are needed to evaluate such pertinent factors as the level of under-registration of vital statistics (births and deaths), and differential levels of population under-enumeration at the time of the 1960 and 1970 national censuses.

** Cities with 20,000 or more inhabitants are considered "urban" in the context of the report.

During the 30 year period (1940-70), slight changes were registered in the number of Chilean cities with more than 100,000 inhabitants. At the same time, the number of urban centers with populations between 20-100,000 nearly doubled from 14 in 1940 to 25 in 1970. Only three large urban complexes existed in 1940 - Santiago, Valparaiso-Vina del Mar, and Concepcion-Talcahuano, and twenty years later, the situation was identical. During the last intercensal period (1960-1970) only two additional cities - Antofagasta and Temuco - passed the 100,000 mark in population size.

There has been a downward trend in the population of urban residents found in the small and medium size cities, and correspondingly, a concentration of population in the larger urbanized areas. A growing proportion of the urban total is found in the primary city, Greater Santiago contained 51% of the urban population in 1940 and 54% in 1970. This figure is projected to rise slightly to 55% by 1980, accompanying the expected and continued physical expansion of Santiago.

In contrast to the rapid growth of Santiago, and its continuing concentration of the urban population, the second and third metropolitan areas of the country - Valparaiso-Vina del Mar, and Concepcion-Talcahuano - have actually declined in importance. Collectively, they held 24% of the total urban population in 1940, 18% in 1970, and are projected to hold 16% in 1980. Between the two, the relatively slower growth of Valparaiso-Vina del Mar has contributed the most to the decline. This population increased by just 16% in the 1960-70 period, while an increase of 28% was reported for the Concepcion-Talcahuano urbanized area. In comparison, the population of Greater Santiago increased by 49% during the past decade, and the population of the country by 20%.

Small cities in the category of from 20-50,000 inhabitants have also

declined in overall importance. However, in absolute terms, population numbers in the small cities have increased as has the number of cities. Chile had 13 small urban centers with an aggregate population of 395,000 inhabitants in 1940, 14 such centers with a population of 431,000 inhabitants in 1960, and 15 cities in the range of 20-50,000 inhabitants in 1970, with an aggregate population of 411,000 residents. It should be recognized however, that the proportional share of the total urban population held by the small urban centers in Chile has declined dramatically; from 21% to 9% in the 30-year period.

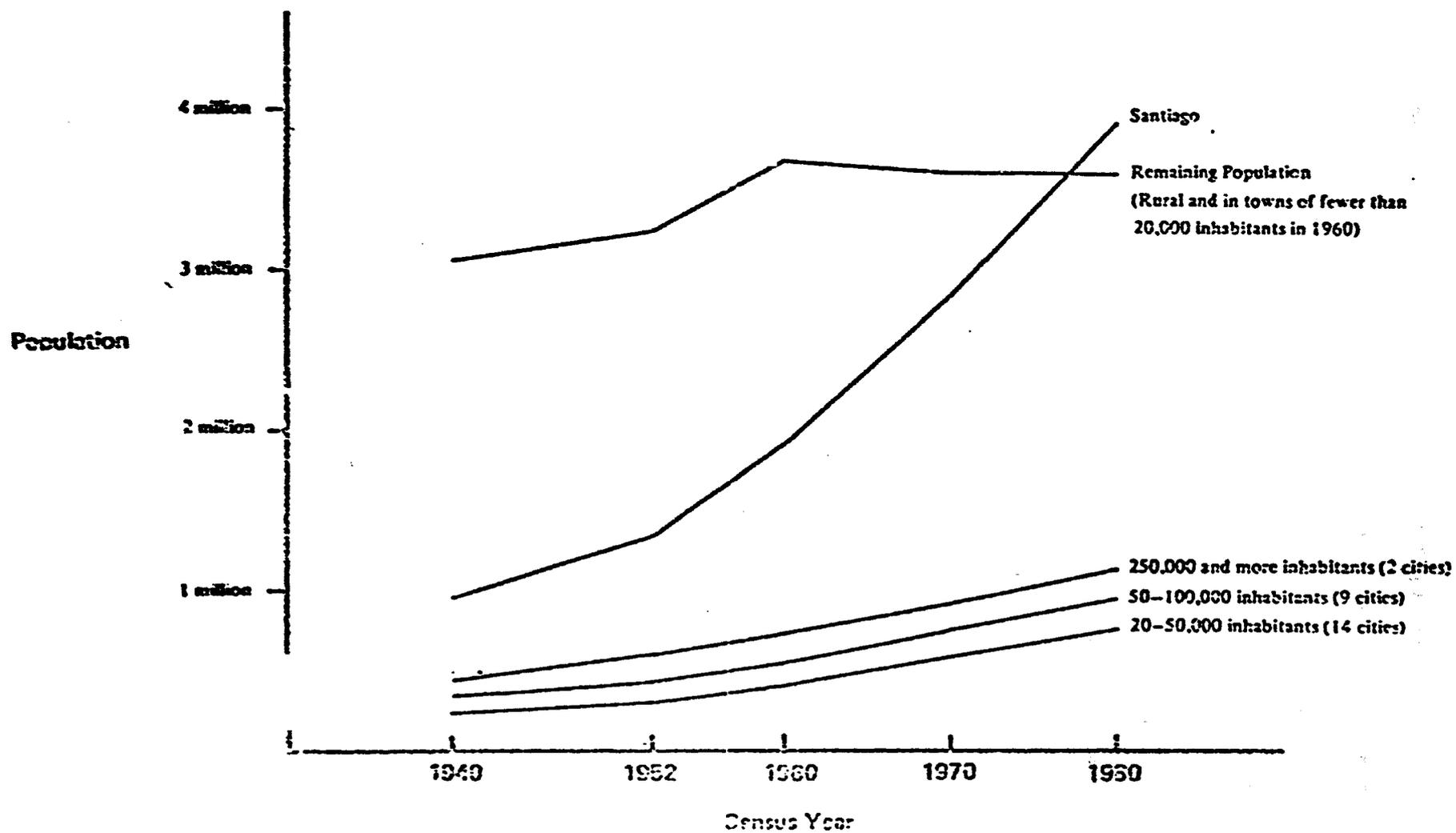
In summary, the Chilean urban population has, with each decade, become more highly concentrated in cities of over 100,000 inhabitants; 76% of the total urban numbers resided in the 3 cities in this category in 1940, and 82% of the total urban population lived in the category's 5 cities in 1970. Also, the aggregate population of small cities (20,-50,000 inhabitants) remains relatively small since towns enter and leave the category as they achieve the upper and lower population limits.

This refers not only to a reduced proportion of the total population which is rural, but also to a reduction in the absolute numbers of rural inhabitants.*

The ingredients of low natural population growth combined with strong rural to urban migration have served to produce net losses in rural numbers. Based on preliminary 1970 census results there has been a net loss of 114,000 persons from the rural sector during the past decade. However, the 3,571,000 rural inhabitants enumerated in 1970, and the 3,554,000 projected in this sector by 1980 indicated a stabilization of rural numbers for the period 1970-80.

* Rural population is defined as those not living in cities of 20,000 and more inhabitants.

CHILE: Population Growth of Urban Centers, by City Size Groupings in 1960



Source: IDB's Technical Department Report #2, Urban Population Growth in Chile.

At the same time, the proportion of the population which is rural is projected to decline from 40 to 34 percent, reflecting the faster pace of growth maintained by the cities.

3. Population Growth and Urbanization.

Between 1940 and 1952, the population of Chile increased from 5,023,000 to 5,933,000 inhabitants, reflecting a very low average annual (1.4%) rate of change. The growth of the urban component was relatively low, averaging 2.7% per annum. Santiago, among the various categories, demonstrated the highest growth rate (3.1%), a tendency which has continued in the subsequent census periods.

In the census interval 1952 to 1960, the national population increased to an annual average of 2.8%, and, correspondingly, the urban rate increased in all categories. Small cities (20-50,000 inhabitants) demonstrated a surprisingly high growth rate of 4.2%. Two small northern cities - Arica and Calama - made important contributions to the surge as each doubled in size. This compares with an average intercensal increase of 43% registered by all cities in this category.

In the latest intercensal period, 1960-70, the national population growth rate once again diminished, averaging 1.9%. City growth responded accordingly by remaining stable from the prior period or dropping off (with the notable exception of Santiago which in spite of the general decline increased its growth rate from 4.1% to 4.4%).

Figure 5 illustrates the overwhelming importance of Santiago in the total spectrum of Chilean urban development. The figure relates growth patterns among cohort groups over the 1940-80 period in terms of absolute population. For the three groupings which cover cities other than Santiago, a clear pattern of slow but steady growth is quite evident. Although there are variations

in the pace of growth among the cities in each category, the general pattern signifies that with a prolonged period of slow demographic growth the great majority of Chilean urban centers have had time to adjust and expand the social, economic and service functions that each must provide. By contrast, the prolonged period of rapid population increase in Santiago speaks for the multitude of problems which have accumulated there - the lack of adequate housing and related urban infrastructure for lower income groups, the lack of employment opportunities, shortages of educational facilities, general congestion, etc.

The trend of rapid population growth is projected to continue to at least 1980 in the capital. This city, which alone absorbed 64% of the total national population increase in the 1960-70 period, is projected to absorb 59% of the increase between 1970 and 1980. Finally, it can be noted from Figure I, that in the present decade the population of Greater Santiago is projected to surpass the total number residing in the rural sector - i.e., the population residing in the rural areas and in towns with fewer than 20,000 inhabitants.

B. Family Ability to Pay for Housing.

As in previous administrations, the present administration in Chile has had to face the problems of assuring adequate income levels to its people under conditions of inflation and an insufficiency of production. The government has moved towards a free market pricing system to bring about an effective relationship between supply and demand, and to reduce inflation. This had led to heavy increases in prices for agricultural commodities that, during the UP administration had been controlled, and for other products whose high costs had been subsidized.

By the end of October 1973, the rate of inflation during that year had

reached nearly 450%. Prices during the month of October 1973 increased by 87.6% over the previous month. To compensate for the increased costs of living, the government decreed a salary and wage adjustment (reajuste) of 67% for the last three months of 1973 and substantial additional adjustments in salaries and wages for 1974. Lower income groups have been granted additional benefits in the form of higher minimum wages and family allowances in an effort to redistribute income.

High prices, reductions in real terms of wages and salaries, and devaluations of the escudo, while increasing the supply of consumer goods over demand had also had the effect of changing the patterns of consumer demand and reducing the consumption of goods within certain income groups. Which of the income groups may be benefiting at the expense of others will be known only when the complex distortions in Chile's income distribution can be determined.

Pending completion of comprehensive studies that adequately determine real incomes and the distribution of same, any determination of family ability to pay for housing must be open to conjecture. It is the Team's understanding that the University of Chile's Department of Economics has a study of income distribution underway.

ODEPLAN's completion of its in-depth study of the extent of poverty, and location, occupation, and other characteristics of the poor in each area of the country should greatly assist in determining the housing needs of the country, and the ability of low-income families to purchase housing.

C. Existing Housing Stock and Loan Acquisition

1. Existing Housing Stock

a. Supply

According to the preliminary Census of 1970, there were

1,752,428 houses in the country.

b. Recent studies indicate that approximately 11,700 houses are destroyed or become marginal for habitation each year.

c. Estimated number of houses needed annually to satisfy population growth demands is 325, 424 as shown below.

TABLE 3

<u>Year</u>	<u>Projected number of houses needed</u>
1974	43,379
1975	44,376
1976	45,397
1977	46,441
1978	47,509
1979	48,602
1980	49,720
	<hr/>
TOTAL	325,424

Housing Planning Division, MINVU

d. The housing deficit. It is MINVU's estimate (based on 1970 preliminary census data), that by the end of June, 1973, there was an urban shortage of 346,973 houses and a rural shortage of 222,196 houses (total 569,069).

2. Land Acquisition

The problem of land acquisitions has recently been changed by the announced policies of the GOC with respect to the use of land. These policies are meant to restrict urban sprawl and to prevent the use of agricultural land for housing. The policy at this time has the force of law because municipalities and MINVU have the responsibility for zoning and construction permits

and these will not be issued freely and uninvestigated without reference to these policies.

Under these new policies easily-urbanized flat or rolling suburban land that has any agricultural use or potential will remain agricultural. Therefore, the more easily urbanized land will not be used for housing and the more difficult hilly and rocky areas will be available. Land will be available through a system of requests through the Ministry of Agriculture and investigations made by GOC inspectors, agronomists, and urban planners. This will make the acquisition of these parcels time consuming and more expensive. The fact that these areas are now the only legally useable land for expansion, will also make them more expensive.

The policy of not using agricultural land for urban expansion appears to be a reasonable idea, but it hampers the implementation of the sites and services concept. Sites and services projects are essentially horizontal expansion and are essential to the alleviation of a great part of the housing problem. This contradiction will be covered at greater length elsewhere in this report.

To put the policy of the use of land to reduce urban sprawl, (and at the same time aggravate population densities) in perspective, it is necessary to consider what are the actual amounts of agricultural land in jeopardy if some of it is used for low cost housing or sites and services?

An individual lot of 140m² with a 25% increment for connector roads and green areas would have a gross size of 175m². If the value of a low-cost family structure is \$4,000, then 250 of these could be built for every \$1,000,000 invested. Therefore 175m² x 250 lots = 43,750m² or approximately 11 acres. Therefore, a \$50,000,000 investment would consume 550 acres and would give homes to 70,000 people. It should also be remembered

that 550 acres is only about 86% of a square mile and it is reasonable to assume that some of the land used, even if agricultural, would be marginal.

However, the current policy does not allow for this use of the land.

Because of the foregoing difficulties, the builder or developer then turns to land inside the urban area. Undeveloped land is available, but the price is generally higher. Expensive land requires the construction of highrise structures of apartment or condominium type configuration resulting in higher cost per unit. In Chile this means upper middle income buyers.

The developer or builder may also turn to older urban areas that should be condemned and renewed. Because he must deal with numerous owners to acquire a parcel of an economic size for development, it is time consuming. The GOC could be helpful in this respect by using their laws of eminent domain (Dominio Eminente) to claim the properties for urban renewal. When this is done, the area is advertised for bids to the industry at large and a successful bidder can then proceed with design, demolition, financing, construction, etc. The current cost of this land, quoted by an officer of the Savings and Loan industry and confirmed by an officer of one of the largest building firms in Chile, is \$30.00/m² and up before the expenses of demolition.

This land cost means high rise buildings with sufficient per unit floor area to negate the need for future (impossible) expansion. This again means building for an upper middle income market.

The current policies governing the use of land in Chile and the price of land, aggravated by those policies, makes low-cost construction very unlikely in or near Santiago without direct GOC assistance either by subsidies or by a waiver or relaxation of their land policies as their contribution to a low-cost housing program. The same policies would be just as restrictive

in other urban areas of Chile but may not be rigidly enforced where the population impaction and the withdrawing of agricultural land from production is on a smaller scale and therefore less visible as an apocalyptic factor.

D. Land Tenure

1. Availability of Land.

The Ministry of Interior estimates that at the end of the CD administration, about 70,000 families lived in slums ("callampas"). This number increased to about 140,000 during the UP administration through "tomas" (take-overs of vacant land). At present, about half of the land occupied by callampa settlements is owned by the Government as the result of its acquisition of legal title from the previous owners through negotiation or eminent domain. Of the remaining half, title to some is being obtained through negotiation or through eminent domain under a new decree adopted specifically for the purpose of acquiring such property.

The availability of land for normal private development will be substantially influenced by the policy of densification (encouraging vertical expansion) discussed above. However, in the short run it would appear that land already designated for urban development can accommodate the number of units which are to be built. MINVU and the Ministry of Agriculture in consultation with ODEPLAN will initially determine which land is to be urbanized and which is to remain agricultural.

After this determination has been made the municipality determines the nature of development. Areas are designated by zoning for uses such as industrial, residential, and commercial.

2. Recordation of Title.

Chile has a system of land title which requires recordation of a notarized Contract of Purchase and Sale, which is actually a deed, in the Office

of the Conservator of Real Property. A title search going back ten years is required in order to determine that a person has a clear and unencumbered title. While some Civil Code requirements might be considered obsolete, the current recordation system and title laws do not appear to present serious difficulties. This is true of single-family, multi-family and condominium properties.

3. Closing Costs.

The closing costs are very high. A transfer tax of 8% is imposed. Economic housing units (Decree Law #2) of 140 m² or less, are exempt from this tax on original sale, and subject to 50% of the tax on the second sale, if completed within two years of certification of construction by the municipality.

Other closing costs include notarial fees, stamp taxes, real estate brokerage fees (normally about 3 to 4%), legal fees if buyer or seller is represented by counsel, and incidental costs.

4. Real Estate Taxes.

The value of improvements of new units under 70 square meters are exempt from the real estate tax for 20 years, 70-100 square meters for 15 years, and 100-140 square meters for 10 years. However, the land is taxed.

The rate of taxation is set by the municipality and varies between 1.5% and 2% of appraised value per year. However, the appraised value is normally very low in relation to actual market value. Appraised values are adjusted with the consumer price index. Most of the proceeds of the tax are destined for the national government, but a small percentage goes directly to municipal government.

While real estate taxes are normally regressive, for Chile, the real estate tax has the potential to be used as a means of progressive taxation in

view of the correlation between better housing and higher income. Higher real estate taxes on luxury housing would also tend to result in a better allocation of resources both within the housing sector, and as between luxury housing and more productive forms of investment. At present, it would not be uncommon for a person owning a home in Chile having a value of \$80,000 to pay a few hundred dollars on real estate tax. This situation is particularly incongruous in relation to the transfer tax on real property of 8%.

E. Urban Infrastructure

1. Sewer System

The General Manager of the Metropolitan Sewer System indicated that, generally, there were collectors that could be connected to every part of Santiago. There are some parts of the city that do not have collectors, but these are the areas that have not been extensively built on. There are plans to put collectors in these areas, but available resources are being used to maintain rather than expand the system, unless absolute necessity requires expansion. There are no treatment plants in Santiago. The collectors discharge directly into the Mapocho river. The river eventually flows to the Pacific about 70 miles away in a direct line and much farther than this by the river route. The fall in this distance is about 1700 feet and therefore, the river is fairly fast in most places. The sewage flows mostly by tributaries. Because of this and the lack of money there are no plans in the immediate future for the construction of treatment facilities.

There is a minimum annual sewerage service charge of E^o 50,000 (U.S.\$45) for each house that is connected to the sewer system.

2. Potable Water System

The potable water system of the Santiago metropolitan area is a mosaic

of several systems. The central area is a municipal system and is surrounded by at least 10 other systems. Some of these water supply nets are municipal and others are privately-owned systems. The privately-owned system that supplies the more luxurious north east section of metropolitan Santiago is looked on with some envy by the other systems because of its lack of difficulty in collecting water bills. The poorer sections of the city are supplied by public systems because of the original reluctance of private investors to build distribution nets in areas where customers might have difficulty paying for water.

Some water comes from the Rio Mapocho upstream from the city. In other areas, it is easier to dig wells (70-100 meters average depth) and cheaper than long pipe lines from the relatively clean river water north of the city. Water treatment varies in the different systems according to necessity but is generally confined to chlorination and in some cases filtration is used.

There is potable water available in all sections of the metropolitan area with few exceptions. These exceptions are suburban areas that have not yet demanded water and so no effort or money has been spent in these areas to extend existing systems or to dig new wells. One area on the east side of Santiago and in a rising elevation is now being supplied, because of demand, by the installation of booster pumps and new piping connected to an adjacent system.

The General Manager of the Santiago Potable Water System, says that there is no scarcity of water either from the river or underground sources. An expansion program is limited at this time because of lack of financing.

3. Medical Facilities

The Servicio Nacional de Salud (SNS), part of Chile's social security system, has clinics or hospitals located in all parts of Chile. Santiago

has about 10 of these facilities. An ill, or disabled person can go to one of these hospitals in the quarter of the city in which he lives. If first aid is required he will receive it reasonably fast.

Some doctors in private practice will accept SNS patients and then bill the SNS for payment. Many doctors with large practices however, do not usually accept SNS patients. There are 160 private clinics and other hospitals in Santiago treating everything from maternity to psychotherapy.

4. Schools

Figures furnished by MINVU show the school age population of Chile to be over 3,000,000 persons as of 1973. This is 30% of the total population. The figures also show that 2,400,000 of these students are in nursery or primary schools. High school and university populations account for 600,000 of the 3,000,000 or about 20% of the school population. About 1.5% of the population continues their education to a four year college degree.

The Ministry of Education has a statistical department that constantly evaluates the need for schools in populated areas and especially in areas where population densities are increasing. Where these areas are defined, it is also part of their task to establish schools of the proper grades and size.

F. Urbanization Controls

1. Zoning

The metropolitan area of Santiago consists of the Santiago nucleus and 15 surrounding municipalities. The area north of the Mapocho River is mostly a series of lower-income settlements. The higher foot-hills to the northeast are where the upper income groups have settled. The area to the west is beginning to be built up with middle-income housing and some "campamentos" (slum or squatter settlements). The area to the south is also developing into a mosaic of middle-and lower-middle income residential areas.

The Central government, through MINVU, has an overlay master plan for zoning requirements and generally accepts as de facto zoning whatever character an area has developed over the past. It looks closely at proposals to build commercial or industrial buildings in an existing residential area, but it is inclined to accept commercial or industrial building in areas that have historically followed a trend in that direction. This is probably a reasonable practice, given the facts that much of the central city and its surrounding municipalities have already been cast in whatever character they now exhibit, and to change this in a short time would be expensive, especially when greater priorities exist for capital resources.

2. Municipal Regulation of Urbanization

Municipal approval of all proposed construction or site development is required. Upon approval of construction, a tax of 4% is imposed on the estimated value of construction (normally under-estimated).

The area of municipal regulation and approval is recognized widely in Chile as a major source of delay and unnecessary cost which artificially elevates the cost of providing housing. Provisions such as requiring a mortgage on a site to be developed, in favor of the municipality, plus a bond for 20% of the cost of urbanization, for the sole purpose of assuring that urbanization is completed, adds substantial costs. It typically requires substantial time to obtain partial releases of the lien in order to clear title for sale of completed houses in an incomplete development. Many of the building code requirements are of relatively high standard and sometimes unrealistic which increases the cost of construction.

The Seminar of the Cost of Housing held September, 1974, details many of the provisions of current laws which are causing severe problems. The Minister of Housing is authorized by Decree Law No. 602, to alter the laws regarding

construction and urbanization pending approval by the Junta of a final new law by the end of 1975. The Seminar recommended the following "indispensable" modifications for the short run:

a. Acceptance of different types of bonds or undertakings to assure the municipality that development will conform to building code requirements or their elimination where development is financed by SINAP or a government entity.

b. As to off-site improvements, such as sewerage treatment and water purification systems, a Public Utility District (PUD) type of arrangement should be permitted so that housing projects may satisfy the requirements rather than having to cover the costs during the construction phase of the project.

c. Municipal permits should be simplified by using standard forms, eliminating some unnecessary paper shuffling, and generally streamlining processing.

d. A whole series of obsolete and excessive building code requirements should be eliminated.

e. The role of the Director of Municipal Works should be clarified.

f. Greater flexibility to develop pavement, electricity, gas, and street lights in stages, should be permitted.

In addition to the above, it was suggested that the Ministry should consider exempting construction of transitional housing from municipal control entirely, except where constructed through municipalities. Since MINVU has determined where to locate such housing, and will regulate the type of construction, it should have total flexibility to reduce costs to the minimum.

Team Comments

With respect to item 2(a) above, consideration should be given to more substantial changes in the present requirements for municipal approval. It should not be necessary to encumber the land to assure compliance with legal requirements or to insure that development, once begun, will be completed. The municipality could be given the ability to obtain a lien in the event of failure to meet certain requirements.

In the Team's view, the interim modifications recommended by the committee appear to have merit, pending further studies being carried out by MINVU's study commission on land and urbanization policies.

III. PRIVATE SECTOR PARTICIPATION IN HOUSING

A. Role of the Private Sector

1. The Chilean Construction Chamber (CCC).

The GOC originates about 80% of all construction investment in the country. Therefore, construction firms, their suppliers and their sub-contractors are almost completely dependent on government bids and contracts. From the government's side, the housing sector is not only critically important for the economy, especially with regard to employment and family income of its people, but serves as an important instrument for implementation of its economic policy. The interrelationship between the construction industry and the government is a permanent fact of life in Chile.

The Chilean Construction Chamber (Camara Chilena de la Construccion or CCC) represents the construction industry in its relations with the government to a considerable extent. About 700 construction firms and independent professionals belong to the CCC. Members account for approximately 90% of total volume of contracts and fixed capital in three branches of activity: general contractors in housing and public works; specialized sub-contractors in plumbing, heating, gas, electric, etc.; and the materials industry (manufacturers of cement, brick, wood, and hardware products).

CCC's efforts to foster reforms in the government's policy-making process have grown out of the difficulties of its members as they attempt to produce, earn profits, increase their capitalization, and maintain their business operations. One concern has been the general level of construction in the country, determined largely by the size of the budget for public works and housing. Another is the structure of government incentives for private investments in construction such as interest rates, taxes, and rents. Also there are the delays experienced in carrying out projects

through the public sector bureaucracy. Other concerns are the lack of credit, instability of the sellers' market, unpredictable return on investment, etc.

While a primary CCC objective has been to further the ultimate welfare of the industry it represents, its efforts towards increasing the level of construction have encouraged GOC housing policy initiatives that might otherwise not have materialized. Three such initiatives (described elsewhere in this report) have been:

a. Decree Law No. 2 of 1959 which provided special tax incentives for construction firms, economic incentives for home investment, and new capital for the housing sector.

b. The National Savings and Loan System (SINAP).

c. Creation of the Ministry of Housing and Urbanism, MINVU.

Under the UP regime, cooperative efforts between the government and the CCC progressively cooled. According to the CCC, conversations between its Executive Board and the Ministry of Housing (and heads of the housing corporations) were completely cut off after October, 1972. At the same time, CCC accused MINVU of substituting political for technical production norms.

Under the present government, the CCC has resumed an active dialogue with the ministries and corporations in the public sector and it actively participated in the September, 1974 seminar on lowering housing costs.

2. The Construction Contracting Industry.

a. Size of Industry. The yellow pages of the Santiago telephone directory list 350 builders. There are estimates that at least 20% of these are out of business since the directory was printed, but this is not based on any formal survey. Regardless of their current insolvency, their skills and knowledge are still intact and usable when needed. There appears to be no shortage of skilled or unskilled labor in the industry, nor is there any

foreseeable shortage in any critical building materials, including lumber or cement.

The basic organizational units are, as usual, the general contractors and sub-contractors. There are also component manufacturers, such as COPIHUE, who make wood house components but are ultimately, because of their factory based operation, dependent on a general contractor or sub-contractors to produce a turn-key project.

In any case, the builders in Chile are sophisticated and numerous enough to produce a volume of housing units but they are now being under-utilized.

A comprehensive view of Chile's ability to build housing units must also take into consideration the fact that at present there is not enough construction business for a continual cash-flow that will permit the contractors to maintain a permanent staff and to amortize their investment in heavy equipment. In other words, with all of the building activity, that currently exceeds 60,000 units per year, there are many contractors, journeymen and laborers unemployed. At present, the primary constraints on production are insufficient sources of financing (both long and short-term) and the absence of proper cash flow management procedures.

The S and L system, which does almost all of the mortgage financing in the private sector, has staff members who survey properties under construction every 15 days in order to make periodic payments to the builders. This system is used as a substitute for construction financing, but it is cumbersome. A simpler system, based on stages at completion, could help to expedite disbursements and improve cash flow management.

b. Pre-fabricated Wooden House Components. The Swedish subsidiary, Viviendas COPIHUE, produces modular components for wood houses. The company manufactures all of the modular panels, sash, door, floor panels, trusses

and purlins (all of the wood components either assembled or pre-cut), and will deliver this package to Santiago at a cost of U.S. \$3,000 for a 70m² house. This is approximately \$4.00 per sq. ft. This price includes some chemical treatment of certain members, wood chip insulation in wall cavities, interior paneling, delivered in the Santiago area. This is basically a shell house and does not include finished roofing, electricity or plumbing.

Because of its low cost, this house merits special attention, Although it would have the same problems of land as the masonry units, its current quoted costs are about 35% less than concrete or masonry construction.

The availability and relatively cheaper transport cost of wood as opposed to cement, steel, aggregate or any type of masonry units is an important cost factor. The availability of any building material or component for wooden houses does not seem to be a problem even with a highly accelerated housing program. Wooden houses are durable if properly constructed and the obvious problems inherent in wood construction are easily foreseen from much background experience and easily avoided through properly written specifications and sufficient on-site inspection.

There is some problem with combustibility, but this too can be minimized by correct design, properly written specifications, and the use of fire retardant materials such as chemically treated lumber, dry-wall elements, or plastered interior walls.

Moreover, wood construction is resilient and highly resistant to seismic forces. This resistance is easily and cheaply built into the structure as against expensive measures necessary for masonry construction.

In Central and Southern Chile, insect damage to wood structures is not a serious problem.

c. Transitional Housing. MINVU is currently building low-cost wood houses.

One hundred and twenty five thousand of these are planned by the end of 1977, beginning with the construction of 5,000 such units for the current year and 40,000 units per year beginning in 1975. These are called "transitional" because they are considered temporary shelter for low income families who are expected to move on to something better. They are neither for sale nor for rent. These houses are about 36 m² of floor space of wooden floor and wall construction built on pilasters supporting the sub-floor grade beams.

The houses are not completely pre-fabricated. They are made from panels and roof trusses that are assembled on jigs. The panels and simple trusses are transported to nearby lots and erected. The resulting structure is reasonably durable, plumb, and level. They are placed on narrow lots with about two meters between houses to discourage tenant expansion. It is our understanding that similar houses built after the 1939 earthquake, and supposedly temporary, are still being used. This would indicate that such temporary houses are quite durable and that their "temporariness" could last at least 35 years.

The pre-fab method itself is not especially economical or efficient. The principal innovation is the use of a jigs for making panels. It is understood that the jig method is used because skilled craftsmen are in short supply.

The cost of these houses in place is between \$1,700 and \$1,800. This does not include the cost of raw land or related urbanization.

d. Traditional Housing

1. Multi-story (up to 5) Reinforced Concrete and Masonry Condominium or Coop Units These types fulfill the GOC policy

of minimal horizontal expansion, but are expensive to construct in Chile. Inherent in the design is the impossibility of future dwelling unit expansion and therefore, the units should be built originally to include reasonable livability and adequate storage without additions or remodeling. This

consideration, if followed, adds to the already high construction costs. Anti-seismic design considerations also add to the cost and lead time before construction starts which seems to be longer than with more simple structures. This time lag is an important consideration in Chile on any project where planning and implementation require time for processing through the bureaucracy, while inflation constantly increases the costs of the dwelling units. At the present time, this type of structure, because of high per unit cost and foreseeable higher costs in delays, does not seem the practical answer to the resolution of Chile's housing problem.

2. Row house or town house configuration. This would help increase the dwelling unit density and could be done in either masonry or wood. If done in wood, a masonry fire wall between units would be important but not expensive as it would also serve as a party wall. These units could be sold individually as condominiums or cooperatives. They could be one story or multi-story, but probably not more than two story. They could also be built with the first floor of masonry or reinforced concrete and the second floor of wood. There are important cost considerations in this and some advantageous technical considerations that can be detailed later. These units could also be designed for some minimal future expansion into a rear yard or patio which could reduce some of the original cost in lessened immediate space and storage considerations. Their livability would be better than apartment type walk-ups and their land consumption factor would be somewhere between the apartment type building and individual single family dwellings.

This concept may be one of the more acceptable ones for Chile considering costs, GOC policy and livability factors. It should be studied further.

3. Duplex or semi-detached houses. These types of houses

are really only a variation of the row house or town house configuration and do not represent any large saving in land utilization or any large saving in construction costs over row or town houses. There could be some advantage in livability, if more yard space were added to promote light and ventilation more room for outdoor activity, and possible future expansion. But this extra space, if adequate, would be nearly equal to the space required for a single family detached house. These space considerations are assuming a reasonable lot size and not the extremely small lots used for the "transitional" housing now under construction in Chile.

e. Inflation in construction costs since 1968. According to the Departamento de Estudios de la Camara Chilena de la Construccion, the price of a house of 69.80 m² has risen 20-fold in terms of the local currency since the end of 1968. It is interesting to note that the price of materials has gone up twenty-three fold (through July, 1974) while the price of labor has risen 13 -1/2 fold.

It seems obvious that when there was no legal or political restriction, the entrepreneurs raised their price to cover past lean times or losses. In a sellers' market, this was easy to do and the results were so satisfying that the action was repeated month by month without ever reaching a level where buyer reaction was detrimental to the profit picture.

The cost of labor did not go up as immediately or as fast for several classical reasons.

1. Each individual laborer is selling exactly the same product "side-by-side" his competitor, and there is an over-supply of the product.

2. Labor rates, even in highly technical fields and highly unionized areas, tend to lag behind the cost of living or inflation. As a

matter of fact, an increase in labor cost is immediately translated into the selling price of products with practically no lag time and therefore, the laborer except in specialized situations, is almost immediately back to square one after wage raises are negotiated.

These are some basic reasons for the inflated cost of housing in Chile and any program of housing will need to be imaginative and well conceived to even partly combat this constant upward price pressure.

2. Cost of Construction Labor. The Chief of the Department of Statistical Studies of the Camara Chilena de la Construccion, provided the following basic labor scale:

U.S. \$40.00 monthly for common labor

U.S. \$60.00 monthly for semi-skilled labor

U.S. \$80.00 monthly for skilled labor.

These amounts are not all that it costs the employer to hire labor. There are (a) Social Security payments to the GOC; (b) Small daily payments for lunch at the job site; (c) If work is rained out 3 days during the week, the workers receive pay for the entire week; (d) 15 days paid vacation per year; (e) Christmas bonuses and bonuses at the Independence Day celebration in September. These amounts vary with the length of time a worker is with the company. A certain time with the company is required to be eligible for vacations or bonuses. However, these social benefits can in effect, double the regular salary of the worker.

3. Financial Institutions.

a. Banking Banking institutions and procedures are subject to the banking law which is presently contained in D.F.L. No. 252 of March 30, 1960, under supervision and control of the Superintendent of Banks.

At the head of the Chilean Banking System is the Banco Central de Chile, an issue and rediscount institution. Also important is the State Bank (the Banco del Estado), an institution created in 1953 and fully owned by the government. It acts as a savings bank and extends credits for the industrial, agricultural, and commercial development of the country. It has over 150 branches and agencies throughout the country.

The Bank is an autonomous government institution. Its operations are governed by Decree Law 251 of April 4, 1960, in addition to the General Banking Law and other laws and provisions regulating commercial banking operations. It is subject to the monetary and credit policy of the Central Bank. The Bank operates as an investment bank, the funds for which it may attract in the form of savings by the public and by the issue of mortgage bonds.

To encourage savings, the government is taking steps to make interest rates and readjustment provisions on savings more attractive. Current interest rates on savings and on other forms of investments are shown in Tables 4, 5, and 6.

In the field of long- and medium-term lending, the Bank may grant loans for housing to its holders of savings deposits for periods of between 1 and 15 years. Such activity in recent years has been negligible. It extends loans for periods of up to 10 years for the development of agriculture and related industries and for the development of industrial activities that are in the national economic interest. It also finances purchases of raw materials and industrial equipment.

In addition to direct lending, the State Bank may extend loans from the proceeds of mortgage bonds or readjustable bonds. The issuance of readjustable bonds was authorized by Decree Law 537 of August 5, 1953. The proceeds of these bonds are lent in the form of readjustable loans for the development

of agriculture and allied industries and to a limited extent, for the construction of low-cost housing.

Through the mid-1960s, over half of the total loans of the State Bank were directed to the agricultural sector of the economy, about 25% to industry, around 10% to commerce and 15% to the other economic activities, including funds loaned to holders of savings accounts for purchase of homes and other social purposes.

Among other functions, the State Bank has the right to operate as a mortgage bank, through its mortgage department. This department, under the rules laid down for mortgage banks in the General Banking Law, can issue mortgage loans on houses which are financed by the issue of mortgage bonds.

However, as shown in Table 7, the bank has issued no mortgage bonds since December 1972.

Previously existing commercial banks were all nationalized during the IIP regime. The commercial banks mainly extend short-term loans and accept only sight and time deposits. Procedures under which the commercial banks may be returned to the private sector are under study by the GOC.

b. Intermediary Financial Institutions. Financial institutions, public or private other than the savings loan system (SINAP) which act as intermediaries for the mobilization and investment of savings have had only limited volume. The lack of such institutions may be attributed primarily to the relatively small volume of individual savings that have been accumulated. It may also, to some extent, reflect the concentration of savings (such as there are) in relatively few large holdings. With persistent heavy demands for capital, moreover, investments have tended to be made directly rather than through intermediaries. Inflation has also discouraged deposits or other claims payable in fixed amounts of national currency, as most

financial institutions have operated on the basis of such claims.

c. Mortgage Banks.

In addition to the mortgage department of the State Bank, there are two mortgage banks, the Mortgage Bank of Chile, and the Mortgage Bank of Valparaiso *. The mortgage loans which they have made have been financed through the sale of mortgage bonds to the public. The extent of such sales is shown in Table 7.

*A controlling interest in the Mortgage Bank of Valparaiso is held by INVICA (the Institute of Catholic Housing), one of the two largest cooperative organizations in Chile..

TABLE 4

CURRENT AND MAXIMUM CONVENTIONAL BANKING INTEREST RATES

Sources: Office of the Superintendency of
Banks and the Central Bank

YEARS	<u>First Semester</u>		<u>Second Semester</u>	
	Current	Maximum	Current	Maximum
1964	14.39	17.27	14.63	17.56
1965	15.09	18.11	15.30	18.36
1966	15.86	19.03	15.84	19.00
1967	15.84	19.00	15.84	19.00
1968	16.61	19.93	16.61	19.93
1969	19.088	22.90	19.59	23.50
1970	20.00	24.00	20.00	24.00
1971	15.00	18.00	15.00	18.00
1972	15.00	18.00	20.00	24.00
1973	30.00	36.00	50.00	60.00
1974 (Jan. 1 to March 22)	50.00	60.00
(March 23 to May 24)	75.00	90.00

NOTE: It corresponds to the annual interest rate which is in force in the semester indicated. Up to 1965, the current interest was determined by the Office of the Superintendency of Banks. Since the first semester of 1966 this is done by the Central Bank.

In accordance to laws 11,234 (of 8/9/54) and 16,464 (of 4/25/66) the maximum conventional interest could not exceed more than a 20% at the established current interest consistent with such provisions.

TABLE 5MAXIMUM BANK INTEREST RATES ON
NON ADJUSTABLE FINANCIAL TRANSACTIONS (1)

In Force Since May 25, 1974
Source: Central Bank of Chile

Nominal Annual Interest Rate According to Terms and Form of Payment

Term	Advanced Payment	Payment Due
Up to 30 days	105%	115%
Up to 60 days	100%	121%
Up to 90 days	96%	126%
Up to 120 days	92%	133%
Up to 150 days	88%	139%
Up to 180 days	85%	146%
Up to 210 days	82%	154%
Up to 240 days	78%	162%
Up to 270 days	75%	171%
Up to 300 days	72%	180%
Up to 330 days	69%	190%
Up to 360 days	67%	200%

(1) See Law Decree No. 455 published in the Official Newspaper dated May 25, 1974.

TABLE 6INTEREST RATES ON READJUSTABLE SAVINGS INSTRUMENTS

Detail	Interest Rate
Readjustable Savings Certificates, Central Bank 1/	7%
Long-Term Savings Deposits, State Bank 2/	4%
Free Savings Accounts, National Savings and Loan System 3/up to	5%
Readjustable Mortgage Values, National Savings and Loan System	6%
Readjustable Notes, Savings and Loan Bank	8%
Readjustable Development Bonds, Mortgage Banks	6%
Savings Deposits, CORVI	3%
Readjustable Bonds 1/	7%
Sinking Funds for the redemption of Reconstruction Bonds 1/	8.5%

1/ Over the readjusted amount.

2/ Fixed by the Director of the State Bank annually.

3/ Fixed by each Savings and Loan Association.

Source: Central Bank

TABLE 7

INDICATORS OF PRIVATE SAVINGS 1/
(in millions of Escudos)

Detail	Dec. 71	Dec. 72	Dec. 73	Mar. 74	Apr. 74	May 74
I. READJUSTABLE SAVINGS	10,524.0	22,929.2	126,335.7	220,376.6	244,272.7	325,259.4
A. SINAP	5,085.5	10,308.5	50,626.9	140,961.5	160,438.1	235,414.3
1. Associations' net Savings Deposits	2,499.4	4,354.2	15,911.6	40,895.8	42,375.0	45,096.9
2. Readjustable Mortgage Values	2,350.5	5,413.8	31,418.9	96,134.3	114,913.4	186,603.6
3. Central Bank Re-adjustable Note	235.6	540.5	3,296.4	3,931.4	3,149.7	3,713.8
B. BANKING SYSTEM						
1. State Bank Long-Term Savings Deposits	4,041.0	9,715.2	60,662.7	55,027.9	55,826.4	57,584.3
C. OTHERS	1,397.5	2,905.5	15,046.1	24,387.2	28,008.2	32,260.8
1. Central Bank Savings Certificates 4/	961.3	1,888.9	11,049.0	17,502.0	19,970.5	23,925.7
2. CORVI Savings Deposits	376.9	694.5	2,937.0	4,489.3	5,134.9	5,843.4
3. Mortgage Bank Re-adjustable Development Bonds	41.0	84.9	42.1	37.4	37.4	33.3
4. Valparaiso's Mortgage Bank Readjustable Bonds	18.3	18.7	20.0	58.5	265.4	258.4
5. Reconstruction Bonds 5/	---	218.5	998.0	2,300.0	2,600.0	2,200.0
II. NON-READJUSTABLE SAVINGS	2,149.0	2,480	6,575.9	8,921.9	9,321.5	8,477.5
A. BANKING SYSTEM	2,135.1	2,468.6	6,573.9	8,920.0	9,319.6	8,475.7
1. Commercial Banks Term Deposits	839.9	365.0	1,494.3	2,569.8	2,616.8	1,995.6
2. State Bank Term Deposits	206.0	118.6	18.6	299.2	305.8	106.4
3. State Bank Savings Deposits View	1,088.8	1,984.8	4,891.0	6,051.0	6,397.2	6,373.7

Table 7 (cont.)

4. State Bank Mortgage Bonds <u>2/</u>	0.4	0.2	0.0	0.0		
B. OTHERS						
1. Mortgage Bonds (in Chile and Valparaiso	13.9	11.7	2.0	1.9	1.9	1.8
III. TOTAL <u>3/</u>	12,673.0	25,409.5	132,119.6	229,298.5	253,594.2	333,736.9

NOTE: Starting November 1973 exclude the following from the table: The mortgage sale from the Central Savings and Loan Bank, since the balance in December 1972 was less than E*0.1 million, which was liquidated in July 1973; The Readjustable Bond of the Central Bank, from which the balance was transferred to Promissory Notes of the same bank; The Readjustable Bonds of the State Bank because to date, they have not been invested.

The Sinking Funds for the Redemption of Reconstruction Bonds are included since November 1973.

The amount corresponding to Readjustable Development Bonds of the Mortgage Bank of Chile were also reviewed; therefore, the totals will suffer some variation for the preceding periods. Previously, the net sales figure was included.

- 1/ Only savings instruments which can be depended upon to provide periodic information are included.
- 2/ Corresponds to bonds in circulation, or that which does not truly signify net saving, but it is estimated that the net sale of the bonds (on which there is no information) is sufficiently approximate to this figure.
- 3/ This total can only be employed as a global savings indicator obtained through these instrument. Strictly speaking, the readjustable savings cannot be added to the non-readjustable savings.
- 4/ The purchase of bank stocks paid for with these monies is not included.
- 5/ Provisional figures. Includes readjustment and interest since February.

B. The National Savings and Loan System (SINAP)

SINAP is made up of two distinct entities: the Central Savings and Loan Bank (Caja Central de Ahorros y Prestamos sometimes called Caja Central or CCAP), and Savings and Loan Associations (Asociaciones de Ahorro y Prestamo).

As of July 31, 1974, SINAP had 690,000 savings accounts, 21 savings and loan associations, and had financed the construction of 143,636 homes during its 14 years of operations.

At the present time, SINAP finances approximately 98% of all private sector home construction. As of July 31, 1974, financing had been arranged for 12,437 homes during the year. Financing for an additional 6063 homes for the balance of the year appears to be assured towards meeting SINAP's projected financing of 18,500 homes for the year. However, a general pessimism exists within the system as to meeting similar financial needs for 1975. The reasons for such pessimism are as follows:

1. The increased competition for savings in the capital market. For example, Treasury Notes are being sold by commercial banks to private investors; notes of the Central Bank are also sold in the open market and so are short term debentures of private companies.

2. The Readjustable Mortgage Participations (VHRs), described elsewhere in this report, being sold by the associations have lost some competitive advantages because of current restrictions imposed by the Central Bank. For example, readjustments of VHR are precluded for a period of six months from time of purchase. Previously the VHR readjustable provisions became effective after a period of 60 days.

3. Currently substantial cash reserves of the Caja Central are being utilized by the Central Bank for the following purposes:

E°8,000 millions: To acquire 1,200 homes in process of construction from CORVI. This was done as an emergency measure to finish these homes.

E° 9,000 millions: To advance to Compania Acerodel Pacifico, owned by the government, to purchase steel for construction purposes. These monies will be repaid in 9 equal consecutive monthly payments, starting October 1, 1974. Since May, 1974, the Central Bank has not accepted new deposits from Caja Central, forcing the Caja to tie up its reserves in readjustable securities from the Central Bank and private businesses. However, the Caja will be in a position to sell such securities (E° 4,800 millions) after January, 1975.

According to law, the Central Bank pays Caja Central a readjustment for deposits made. At present, however, the Central Bank owes the Caja readjustments from January 1, 1974, to August 31, 1974, in the amount of E° 39,000 millions. When such payments will be forthcoming has not been determined.

During the UP Administration, the Caja Central became involved in real estate development which was contrary to their traditional housing policy. As a result, the Caja is presently completing the construction of 1,300 condominium units plus 66 individual homes. Resources invested in this construction totals approximately E° 15,000 millions. Caja Central is planning to finish construction and sell the units through the Savings and Loan Associations.

4. Although the Caja Central had an excess of liquidity at the end of the UP Administration, because the system offered the only readjustable investment at that time, and construction had reached a standstill, the impetus provided by the new government towards the resumption of home construction and the enormous market demand has depleted the previously existing excess liquidity for the system.

Because of those factors, SINAP expects to be in a position to finance only 12,000 units for 1975 unless external financing can be arranged.

The System has been designed to meet the needs of middle-income families who do not require a government subsidy if given reasonable terms of financing.

Cooperative housing has received special attention. More than 24,000 cooperative houses have been financed by SINAP, which represents 17% of all houses financed by the System. Present sales prices of cooperative houses

are as low as E⁰1 million (approximately \$10,000 as of September, 1974).

Finally, the Caja Central, together with the Associations, has created an institution for technical assistance called the National Savings and Loan System Productivity Center (Centro de Productividad del Sistema de Ahorros y Prestamos), to study matters related to the overall operations of SINAP. Conferences and seminars are also conducted regularly for the System's personnel. Two affiliates of the Institute of Financial Education, formerly the "American Savings and Loan Institute" are established in Chile. They also conduct special courses for the improvement of the System's personnel. Through its specialized departments, Caja Central advises the associations on legal, administrative and technical matters.

1. The Caja Central

The Caja Central de Ahorros y Prestamos (CCAP), an autonomous financial entity under MINVU, was authorized by Law 205, on April 5, 1960 to charter, regulate, and support financially the private savings and loan associations. The Caja is administered and directed by a 3-man Board of Directors, appointed by the GOC. The directors hold office for three years and may be reappointed. Their terms of office are staggered to provide continuity of membership. MINVU may participate in Board meetings and can veto resolutions approved by the Board.

The powers of the Caja are spelled out in Law 205 and have proven broad enough to provide necessary control over and support of the system. They may be summarized as follows:

- a. To authorize the establishment of individual private savings and loan associations, to establish standards for their incorporation and operation, to establish limitations on Associations' financing terms, and to review Associations' performance by means of periodic audits.

b. To determine the annual readjustment of the principal amount of deposits in mortgage loans of, and Caja loans to, the Associations. (The maintenance of value mechanism is described in the section on Savings and Loan Associations which follows)

c. To insure savings deposits made in Associations and to insure mortgage loans granted by the Associations as readjusted.

d. To act as a central credit agency for the Associations by means of readjustable loans to the Associations secured by double the amount of mortgage paper, by means of purchase of Associations' mortgage paper, and by assistance in the creation of a secondary market among private investment sources for such mortgage paper.

Funding of the Caja has been, or can be, made possible through the following sources:

Working capital provided by the Government.

The resale of mortgages bought from Associations.

Repayments on mortgages bought from Associations and not resold.

Insurance premiums.

Loans from the Central Bank (no funds are currently being received).

Sales of readjustable notes sold in the secondary mortgage market secured by its mortgage portfolio.

Non-compliance penalties assessed on Associations.

Foreign borrowing. Previous AID and IDB assistance totaling over \$39.5 million is outlined in Section V of this report.

However, as indicated above, many of these sources are limited by current GOC policies.

The Caja Central is subject to the rules and regulations of the Superintendency of Insurance and the Stock Exchange (Bolsa de Comercio), and a

periodic audit by the Comptroller.

Financial statements for Caja's last five years of operations are on file with A.I.D.'s Office of Housing.

The Caja's balance sheet for the year ending December 31, 1973, reflects a total net worth of E° 3,688,776,237 - U.S. \$4,917,034.00.

Its December 31, 1973 income statement reflected the following:

Gross Income

From Mortgages and Investments		E° 695,745,384
Other Income		<u>111,649,607</u>
Total		E° 807,394,991

Expenses

Administrative	E° 157,722,753	
Financial	713,643,304	
Insurance of its own mortgage portfolio	<u>354,359</u>	<u>871,720,416</u>
<u>Net Loss</u>		E° 64,325,425
		<u>(U.S. \$85,767)</u>

NOTE: On December 31, 1973, 750 Escudos equalled \$1.00

The loss shown for 1973 was due largely to the dramatic increase in the additional Escudos required to repay dollars on foreign loans. The December 31, 1972 rate of 46 Escudos to the dollar, increased to 750 Escudos to the dollar by December 31, 1973.

It should, however, be noted that the CAJA's operations for the four years preceeding 1973 were profitable. Net profits registered for the years of 1970, 1971, and 1972 were E° 5,978,690 (\$416,633), E° 3,071,890 (\$109,710) and E° 6,086,033 (\$132,305) respectively.

2. The Savings and Loan Associations.

The Savings and Loan Associations in Chile are private, non-profit, mutual institutions, governed and managed by a Board of Directors, in accordance with the regulations established by their By-Laws, and the general rules and regulations set forth by Caja Central. Associations acquire legal status through the issuance of a charter by Caja Central and the recording thereof in the proper Register. Lending operations of the Associations are restricted to the geographical regions authorized by Caja Central. The 21 associations are located throughout the country. Seven associations (and their branches) are located in Santiago.

The main objectives of the associations are:

To attract funds by receiving deposits in savings accounts from the public and by selling of mortgage participations;

To invest such funds for the construction and acquisition of housing for their members.

a. Mortgage Operation. The prospective homeowner arranges a mortgage with one of the associations. To qualify for mortgage financing, he must have a deposit, a minimum amount of savings as a percentage of the amount of loan requested, for a period of time prior to application (the Caja Central established these limitations).

The down payment varies directly in relation to the amount of loan requested. The association, in extending the mortgage, charges a 3 to 4% settlement fee, depending on the amount of the loan. Its administration fee on mortgage payments thereafter amount to 1/2 of 1% per annum, payable monthly, in addition to the mortgage interest rate of from 4% to 10% per annum. At present, repayment terms under new or outstanding mortgages may not exceed 30 years.

b. Maintenance of Value Mechanism (Readjustment). When SINAP was

established, the concept of readjustable mortgages and savings accounts was introduced as an integral operating precept of the system, to avoid the negative impact of inflation on the mortgage market. Annual readjustments, both of unpaid principal balances of mortgages and of savings deposits were based on the percentage increase in the Wages and Salaries Index or the Consumers Price Index, whichever was the lower. In practice, the Wages and Salaries Index was lower and was therefore used to determine the annual readjustment.

Until 1970, the readjustment formula was workable in maintaining the value of mortgages and savings commensurate with the rate of inflation. By the end of the UP Administration in 1973, the rate of inflation had increased to the point where readjustment did not reflect the inflationary spiral. As a result, the mortgage portfolio of SINAP had diminished in value. To prevent further loss of value, the government by Decree Law #126, of November, 1973, made the Consumers Price Index the sole criteria for readjustment. However, economic realities have precluded full readjustment up to the percentage increase that the Consumers Price Index would allow. A lesser amount of readjustment determined by the Caja has been used. Some officials in SINAP still feel however, that a significant number of mortgagors could incur additional increases in debt service; claiming that many such mortgagors pay as little as 10% of their family income in lieu of the 25% of income deemed reasonable.

With respect to the mortgages under A.I.D. guaranty projects, readjustments for the past 12 years have not been generating an amount of Escudos sufficient to repay the U.S. investors (in dollars), on the loans guaranteed by A.I.D. Presently, only one third of the amount of Escudos necessary to make monthly payments to the U.S. investors is being generated.

The Caja Central is studying policies of readjustment that will adequately reflect the inflationary situation, feels that the use of the Consumer Price Index is a viable criterion and expects to begin using the Index in January, 1975. This will be implemented in accordance with contemplated increases in family income.

c. Delinquent Payment on Mortgages. Mortgagor delinquency has not been a serious problem in SINAP. To maintain a low rate of delinquency, Associations have adopted various measures, including payroll deductions. As of July 31, 1974, delinquencies on 143,636 loans were as follows;

2 months:	5,376
3 months:	1,776
4 months:	<u>4,815</u>
	11,967, or 8.3% of total.

d. Association Sources of Funds. The usual sources of funds for associations are:

Savings.

Mortgage loan repayments.

Readjustable Mortgage Bonds (Valores Hipotecarios Readjustables - VHR).

2% commission on sales.

Financial assistance from Caja Central.

Acting as Administrators for specific projects.

Mortgage transfers (0.5% per annum commission on the declining mortgage amount).

Interest on Caja Central deposits.

e. Associations' Financial Capability. Consolidated financial statements of the 21 Associations are on file in the A.I.D. Office of Housing.

A summary of the Associations' Income and Expense Statement ending June 30, 1973 follows:

<u>Income</u>	<u>June 30, 1973, Escudos E^o156 = \$1.00</u>	
Interest on loans	296,685,000	
Interest on deposits	160,663,000	
Commissions	278,525,000	
Other Income	35,084,000	
Surplus on readjustments <u>1/</u>	-	
Income from previous periods	<u>4,942,000</u>	
Total Income		<u>E^o 775,703,000</u>
 <u>Expenses</u>		
Depreciation	26,613,000	
Salaries	368,512,000	
Administrative expenses	180,210,000	
Directors' fees	6,768,000	
Directors' employees salaries	15,043,000	
Insurance	45,676,000	
Financial expenses	839,000	
Amortization of loss - previous periods	4,400,000	
Loss on readjustments	-	
Expenses - previous periods	<u>312,000</u>	<u>E^o 648,373,000</u>
Net Income Before Dividends <u>2/</u>		<u>E^o 127,330,000</u> <u>U.S. \$816,211</u>

1/ Income from surplus on readjustments is reflected in the legal reserve account in the Associations' Balance Sheet

2/ The rather low net income reflects the low return on the Associations' mortgage portfolio. (Particularly true during the fiscal year ended June 30, 1973), when Caja Central reduced the average interest rate from 8 1/2% to 7% and closing fees from 4% to a range of 3% to 4%.

The consolidated net worth of the 21 Associations as of June 30, 1973

before dividends was as follows:

Reserves	E° 2,146,013,000
Surplus	<u>127,554,000</u>
	<u>2,273,567,000</u>
	U.S. \$14,574,147

Team Comments

The success of the Savings and Loan System in Chile has been demonstrated by its ability to finance (by July 31, 1974), 143,636 homes and generate 690,000 savings accounts in 21 savings and loan associations. This has been accomplished during the system's fourteen years of operations.

It would appear that SINAP is able - administratively and technically - to continue and expand its present role of providing home financing in the country. The System is presently responsible for financing 98% of all housing construction to the private sector (approximately 18,500 homes for 1974).

Team findings with respect to SINAP operations are as follows:

1. Savings Attraction

At the present time, SINAP's secondary type of mortgage market may be considered as synonymous with free savings; i.e., not related to the desire for acquiring homes. On the other hand, regular savings accounts are usually opened by individuals expecting to purchase homes. Only a small portion of the Chileans opening savings accounts in the savings and loan associations do not require housing and home financing.

The increases in savings accounts from 302,000 in 1969 to 690,000 in 1974, may be attributed primarily to public confidence in the system.

SINAP holds about 65% of all savings being attracted by all other financial institutions in Chile.

2. Lending Operations.

Delinquency ratios appear to be satisfactory within the savings and loan association mortgage portfolios. This is indicative of prudent underwriting and collection practices.

3. Management.

Accounting and other records appear, generally, in order. Efforts are being made to develop meaningful statistics for use in improving management control.

4. Financial Status of the Systems.

The current market value of houses mortgaged by SINAP is estimated at approximately U.S. \$2,500,000,000 (September, 1974 escudos 1,000 = 1 U.S. dollar). The 143,636 mortgage loans (readjusted as of July 31, 1974) total U.S. \$800,000,000. In reviewing the financial statements of the Associations, the accumulated profits appear relatively small (as of July 31, 1974, E^o5,200 millions). Furthermore, income from closing fees exceeded mortgage interest income. (For the period January 1974 to July 31, 1974, this difference amounted to E^o1,500 millions.) This means that if the level of financing drops, many associations could be operating at a loss.

In reviewing the financial statements of the Caja Central for the last 5 years, only the year ending December 31, 1973 had an operational loss.

Regularity of Dividends Paid to Savers

Associations have declared regular dividends to their savers.

The only exceptions were:

For the year ending June 30, 1971:	1 Association
For the year ending June 30, 1972:	2 Associations
For the year ending June 30, 1973:	3 Associations

In those years where some associations have incurred losses in those income statements they have nevertheless paid dividends against their reserves. These cases were as follows:

For the year ending June 30, 1971:	4 Associations
For the year ending June 30, 1972:	2 Associations
For the year ending June 30, 1973:	3 Associations

6. Readjustment of Mortgages and Convertibility of Escudos To Dollars.

The annual readjustment of mortgages has not provided a sufficient amount of escudos for the last twelve years to repay in dollars the outstanding foreign loans. It was therefore imperative that the Caja Central and the GOC make the necessary changes in their readjustment formula to avoid further financial losses to the Caja Central. A recent National Savings and Loan League Report on the three HG projects in Chile notes that "A new readjustment procedure based on the use of the Consumer Price Index is to be implemented by January 1, 1975."

7. Minimum Housing Considered Applicable to SINAP's Operations.

The Caja Central feels that at present, it would be impossible to construct a home meeting SINAP standards under current costs of operation, whose selling price is less than U.S. \$8,500. Only cooperatives are obtaining financing for such homes having an area of 50 m². The Caja also feels that such homes are the minimum quality necessary to assure a viable underwriting risk for the system.

8. Distribution of Loan Activity.

The following statistics describe the distribution of the 143,636 loans made by the System, since its inception, according to family incomes: (Escudos July 1974)

<u>Monthly Income</u>	<u>Number</u>	<u>% of Total</u>
Up to E' 68,000	7,963	5.54
E' 68,000 - E' 102,000	17,860	12.43
E' 102,000 - E' 136,000	18,406	12.91
E' 136,000 - E' 170,000	19,780	13.77
Over E' 170,000	<u>79,627</u>	<u>55.45</u>
	143,636	100%

Caja Central's policy pursuant to the housing policy of the Government is trying to expand as much as possible, their lending operations to lower income groups, but considers the cost of construction a major obstacle.

9. SINAP Emergency Measures Towards Qualifying Applicants For Home Mortgages.

Because of the presently existing distortions in family ability to pay for housing, the Caja Central has authorized the savings and loan associations to:

Extend all mortgage loans to a 30-year term.

Accept the income of all members of the family in order to approve the credit of applicant on the basis of a 25% monthly payment of family income, thus relaxing prior credit criteria.

Collect from new mortgagors only 60% of the monthly debt service payments and capitalizing the remaining 40% to the unpaid principal balance of the mortgage. This authorization has been granted for five years. Since January 1974 when the authorization was made, approximately 90% of all new homes being financed by the savings and loan associations

have been approved under this emergency measure.

Because of the rapid appreciation of market values of new housing, it is felt that SINAP's mortgages, with readjustment and additional "add-ons" will continue to bear a satisfactory ratio of loan to value of the house and will not adversely affect the financial stability of the system. The alternative would have been to stop making mortgage loans.

C. Cooperatives

The Savings and Loan Associations, as well as other government programs, give both priority and certain advantages to housing cooperatives. In fact, many of the IDB loans were specifically contracted for their use at interest rates of only 2 per cent to the Caja Central and a 5.5 to 6.5 per cent per annum interest to the participating cooperative.

Chile currently has about 1500 housing cooperatives, and they vary greatly in size and strength. The usual cooperative is formed by neighbors, members of the same union, or by employees in the same industry, who have united to take advantage of the cheaper and more easily available credit, the exemption from certain taxes, and the lower cost of materials that can result from a multiple housing project.

Belonging to a cooperative requires experienced guidance. Members usually know little of the legal requirements or the bureaucratic steps through the approval process. Generally, prospective cooperative members are not capable of organizing themselves, making group decisions, buying land, obtaining a loan, hiring an architect, and contracting for construction. Therefore, to be a functioning cooperative, as well as CORHABIT, which specializes in guiding cooperatives through the processes that begin with obtaining legal

recognition from the Ministry of Economy and reaching the point of final delivery of houses.

The two largest cooperative services organizations are the Instituto de la Vivienda Catolica (INVICA, or the Institute of Popular Cooperative Housing), which is an outgrowth of the international Catholic charity organization, CARITAS, and Technicoop Sociedad Auxiliar, Ltda. (TECNICOOP), formed by individuals committed to the cooperative movement. Although a fee is required for advice and guidance (CORVI, the cheapest, charges 3 per cent of the total investment), it is difficult for a housing cooperative to function in Chile without such assistance.

The individuals contemplating forming a cooperative must be a relatively homogenous group with similar savings, income and work location potential because, by law, the cooperative as a whole, rather than the individual members, makes deposits and repays the mortgage loan. The stability of income necessary for participation rules out many of the poorer workers who suffer from periodic unemployment. Cooperatives composed of middle-income members can often take advantage of savings and loan association facilities. Cooperative memberships that are less well-off have in the past turned to a more directly government-controlled institution such as CORHABIT.

IV. FOREIGN ASSISTANCE - PAST AND PRESENT

A. Introduction

The relative importance which Chile assigned to housing during the 1960's was a factor in the attraction of a significant level of foreign assistance to the sector. The results of this assistance were important in terms of both strengthening the institutional structure and the amount of shelter constructed.

B. Role of External Assistance in Sector

1. AID Development Loans.

In 1960-61 there were large grants and loans for housing reconstruction following the May 1960 earthquakes.

A seed capital loan of \$5.0 million, and a \$5.0 million grant in 1961, were instrumental in establishing Chile's savings and loan system (SINAP). In 1964, there was another AID development loan of \$8.7 million made to the SINAP.

2. AID Housing Guaranty (HG) Loans

HG loans totaling 4,690,000 have provided mortgage financing through SINAP for three housing projects. These projects, their sponsors, year in which contracts were signed, guaranteed loan amount, etc., were:

- | | | |
|-----|--|-------------|
| 221 | La Libertad Savings & Loan Association
Santiago, (1968)
Single Family Homes with the Escudo equivalent
selling prices of \$4,000 to \$6,500 | \$1,000,000 |
| 471 | Continental Homes, Concepcion (1968)
single family homes with the Escudo equivalent
selling prices of \$6,000 to \$6,773 | \$1,690,000 |
| 442 | INVICA, Santiago (1969)
cooperative single family homes with the
selling prices of \$6,225 to \$7,099 | \$2,000,000 |

3. IDB Loans

Chile has received seven IDB loans for housing amounting to about \$34 million

Of these, five were channeled through government agencies and two through private institutions. They were for savings and loan institutions.

Loan 34/TF (Social Progress Trust Fund) was made to the Caja Central de Ahorros y Prestamo, and its purpose was the financing of the construction of houses for members of cooperatives. A total of 3,087 units were constructed.

Loan 38/TF was made to CORVI for the Sociedad Promotora de Viviendas Economicas Limitada (PROVIEN), a private body composed of workers from Vina del Mar and Valparaiso. 1,349 houses were constructed in Vina del Mar.

Loan 66/TF was made to the Corporacion de la Vivienda, (CORVI), on November 5, 1963, for the construction of 2,416 houses in Vina del Mar.

Loan 84/TF was the second made to the Caja Central de Ahorro y Prestamo and its purpose was to strengthen the savings and loan system through a contribution to the financing of 2,504 dwelling units to be constructed for members of cooperatives.

Loan 94/SF was made to the Corporacion de Servicios Habitacionales (CORHABIT). The contract signed October 6, 1966 covered the construction of 10,714 low cost dwelling units in 71 communities.

Loan 105/TF was signed on April 5, 1967 with CORVI for cooperative housing, sponsored by INVICA-CARITAS-CHILE. The construction of 600 dwelling units formed an integral part of a larger housing complex. The loan also provided for the financing of urban facilities for the rest of the complex.

Loan 152/SF signed September 8, 1967, was the third loan to the Caja Central de Ahorros y Prestamo, for the construction of 3,030 housing units.

Details of these loans are tabulated in Table 8.

4. Ford Foundation

Starting in 1964, the Ford Foundation began a program of support to housing and urban development focused mainly on training and research. Ford support by 1970 had totaled \$2.5 million.

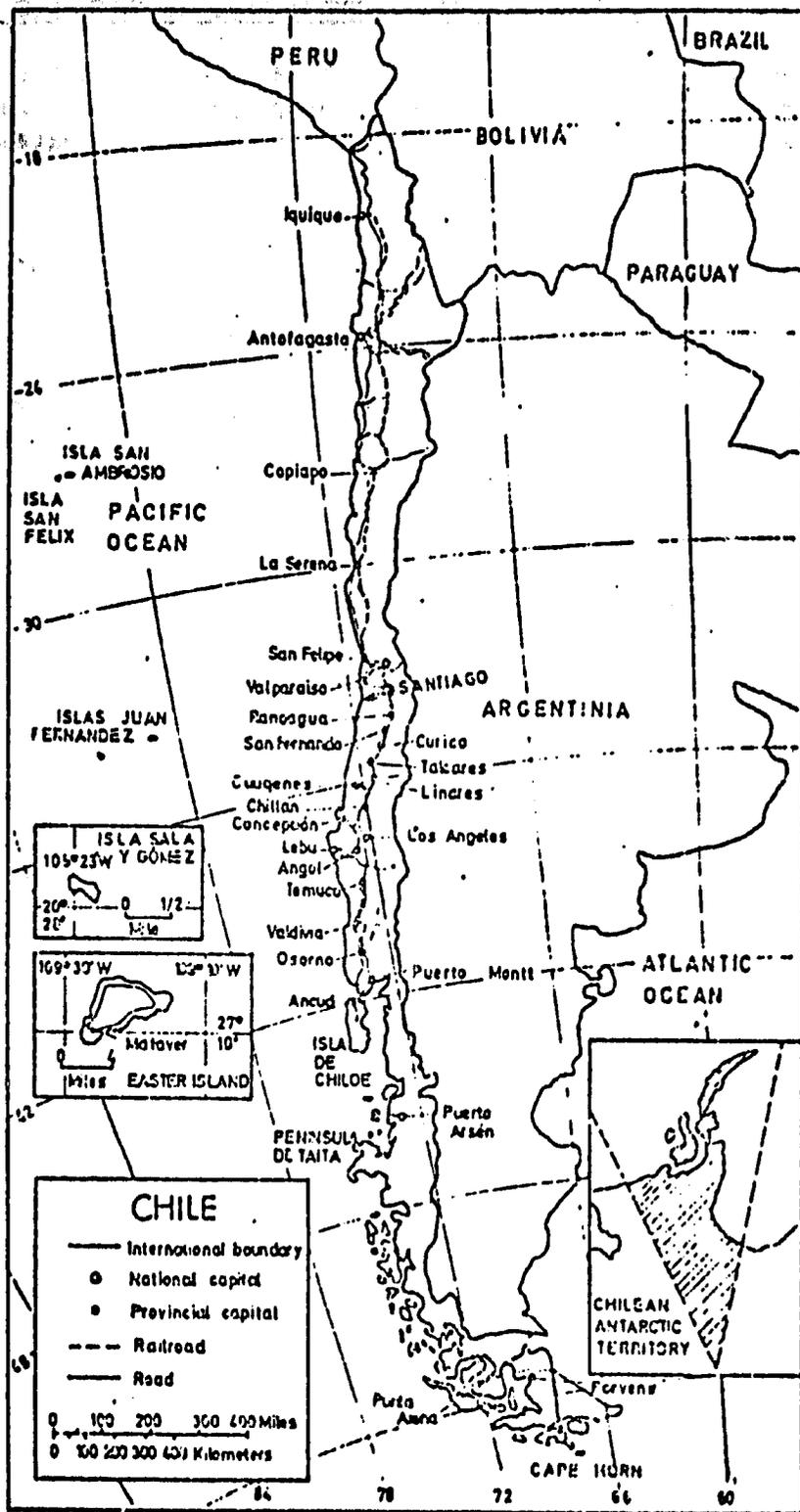
The Ford Foundation research and training has been performed by its team of technical specialists and also by contract. A principle recipient of the Ford support was the Interdisciplinary Center for Urban and Regional Development (CIDU) a post-graduate institute of the Catholic University, which received \$535,000,00. In addition, Ford team members handled teaching assignments at CIDU.

The Ford program has also supported the Ministry of Housing and, to a lesser extent, the National Planning Office with advisory assistance and research.

TABLE 8INTER-AMERICAN DEVELOPMENT BANK INVESTMENTS IN HOUSING

Operation	IDB Loan (Millions of Dollars)	Local Contribution (Millions of Dollars)	Total Subprogram	Number of Housing Units Programmed	Construc- tion Period Programmed	Date Approved	
34/TF	5,000	2,697	7,697	Direct con- struction, houses for cooperatives	2,300	2 years	5/17/62
38/TF	1,724	4,692	6,416	Direct con- struction	1,885	2 years	7/26/62
66/TF	2,000	3,600	5,600	Direct con- struction	2,400	2.5 years	10/24/63
84/TF	5,000	2,700	7,700	Direct con- struction	2,500	2 years	7/30/64
94/SF	12,000	12,000	24,000	Direct con- struction	11,000	2.5 years	4/24/66
105/SF	2,000	500	2,500	Direct con- struction	840	2.5 years	3/11/65
152/SF	6,000	7,614	13,614	Direct con- struction	3,030	3 years	8/3/67
	33,724	33,803	67,527		23,955		

FIGURE 6



V. GEOGRAPHIC FEATURES*

Chile is located on the extreme southwestern corner of South America, bordered by Peru, Bolivia and Argentina, as shown in Fig. 6. The country stretches some 2650 miles along the Pacific Ocean with the Andean Mountains providing the eastern frontier. Its average continental width is hardly more than 100 miles and at no point is it greater than 250 miles. Chile's continental area is 296,800 square miles (slightly larger than the state of Texas). The Chilean antarctic territory has an area of 500,000 square miles.

Chile is divided into 25 provinces. All provinces except seven extend from the Pacific to the international boundary, while the inter-provincial boundaries, in most cases, now follow watersheds instead of rivers, thus confining within one province the waters of a single system.

The climate and topography of Chile vary from arid tropical deserts to snow fields and rain-drenched subarctic tundras. The Andes rise within a short distance of the coast to some of the hemisphere's highest peaks, most of them dormant or extinct snowcapped volcanoes on the Argentine boundary. The cordillera is crossed by the Transandine Railway via Uspallata Pass to Valparaiso, and the Transandine Railway of the North via Socompa Pass to Antofagasta. There are also rail connections to Peru and Bolivia. Towards Patagonia and Tierra del Fuego (largely in Chile and including the Strait of Magellan), the Andes decrease in altitude, splitting off into numerous islands.

Among the numerous rivers which cross the country are the Maipo, Maule, Rapel, Bio-Bio, Palenta, Aysen, and Baker. Chilean history has been marked

*Both textual material and maps are from "Market Survey For Nuclear Power in Developing Countries": Chile, International Atomic Energy Agency, September, 1973.

by disastrous earthquakes, frequently followed by tidal waves. Climatic conditions depend to a large degree on the cold Peruvian or Humboldt current,

Three major climatic, topographic and latitudinal regions stand out. The excessively dry northern region (sometimes without rainfall for a decade) extends from Peru to approximately 32° south near Coquimbo -- a barren desert containing the immensely rich nitrate belt and some of the world's most productive copper mines. It also yields iodine as a by-product besides substantial amounts of borax, and salt and some gold, silver, mercury, sulphur, tungsten, manganese, lead, zinc, and guano. High grade iron ore is mined at several mines located between La Serena and Copiapo.

Central Chile, by far the most important region both historically and demographically, extends from 32° south to 42° south. This is the nation's agricultural heartland, a fertile 600 mile long plain of Mediterranean vegetation, known as the Central Valley. Almost 90% of the entire population, centered in and around the two principal cities of Santiago and Valparaiso live here, where the climate is considered one of the best in the world.

Irrigation is necessary in the northern section of the Central Valley, where grapes are grown for Chile's fine wines. Other crops include subtropical fruit (citrus, olives, figs, apricots, peaches, plums, cherries, apples, melons), rice, corn, alfalfa, peas and beans. The more humid, forested southern section is chiefly devoted to grain, (wheat, barley, rye, oats), potato growing, pastures and lumbering.

Mining plays an important part in Central Chile's economy, particularly through the El Teniente copper mines in O'Higgins Province, and the coal deposits of Lota, Coronel, and Aranco. These deposits and the ones near Punta Arenas in the far south make Chile the leading coal producer in South America.

The densely forested southern region of Chile supports only a sparse population. The main industries are oil production, sheep raising, and lumber, and products are processed and exported from Punta Arenas, an active trading center.

VI. ECONOMIC CONDITIONS

A. Introduction

Since 1971, the economy of Chile has been experiencing serious financial and economic difficulties. The situation deteriorated substantially during 1973 as highly expansionary fiscal and monetary policies led to sharp increases in aggregate demand. At the same time, inadequate price and exchange rate policies and rapid changes in the underlying structure of the economy led to serious irregularities and a contraction in real GDP estimated to be nearly 6 percent. As a result, the economy which in 1972 was already suffering from rapid inflation, entered a period of hyper-inflation with the rise in prices estimated in 1973 at 665 percent. At the same time, as the result of increasing world prices for food and petroleum and a fall in world copper prices, Chile's balance of payments came under heavy pressure recording a deficit of approximately U.S. \$700 million in 1973. About half of this was covered by debt relief. The balance was covered by net international reserve losses.

Toward the end of 1973, in an effort to restore internal and external equilibrium, the new government adopted a comprehensive economic and financial program which aims at achieving a recovery in output and providing the basis for sustained economic growth, arresting inflation and correcting the deterioration in the balance of payments. The recovery in output is to be achieved by pursuing realistic price and exchange rate policies and by undertaking priority investments in certain sectors, particularly mining and agriculture. A basic element of the Chilean economic recovery program is the return of a State-controlled economy to a mixed economic system where prices are determined with few exceptions by market forces.

B. Gross Domestic Product

The economy of Chile after declining by 6 percent in real terms during 1973, (Table 2) had by the end of 1974 recovered to its former high achieved in 1972. Aggregate supply and Gross Domestic Product grew at similar rates, approximately 5 percent in 1974. The growth in GDP basically reflects the performance of the agro-stock sector which increased 12.6 percent, the mining sector which increased by 19.5 percent, and the construction sector which grew by 7.5 percent. This increase in output was not experienced in the industrial sector which increased by only one percent.

The growth of aggregate demand during 1974 was strongly influenced by Chile's export performance in as much as domestic absorption grew only 1.4 percent. However, much of this absorption was due to inventory accumulation which if eliminated may have resulted in domestic aggregate demand below the 1973 level.

As a result of declining real wages, the primary determinant of consumption expenditures, private domestic consumption slowed or declined in 1974 by approximately 4 percent. For the public sector, estimates show a small increase in consumption, so that the change in total consumption may have been only -2.8 percent.

The level of gross domestic investments for the year was virtually unchanged from the 1973 level. Much of the investment, 14.2 percent, was explained by increases in inventory. Gross investment in fixed assets under the influence of construction activity and importation of machinery and equipment, grew by 5.9 percent. However, investment still remains below the average figure for 1960-70 of 15.6 percent. While no appropriate price deflator exists to measure real changes of capital expenditures in the government sector, it did increase during 1974 eleven times in

TABLE 9
GROSS DOMESTIC PRODUCT

	<u>Millions of Current Escudos</u>	<u>Millions of 1965 Escudos</u>	<u>1965 Escudos Per Capita</u>	<u>GDP Deflator</u>
1968	,44,283	20,241	2,165	30.9
1969	64,551	20,915	2,193	41.1
1970	93,663	21,691	2,232	39.9
1971	149,597	23,498	2,376	47.4
1972	348,435	23,827	2,367	129.7
1973	1,716,244	22,397	2,187	424.0
1974				
	<u>Rate of Growth of GDP Current Escudos</u>	<u>Rate of Growth of GDP in 1965 Escudos</u>	<u>Rate of Growth of 1965 GDP Per Capita</u>	<u>Rate of Change in GDP De- flator</u>
1968-69	45.8	3.3	1.3	33.0
1969-70	45.1	3.7	1.8	- 2.9
1970-71	59.7	8.3	6.5	18.8
1971-72	132.9	1.4	-0.4	173.6
1972-73	392.6	-6.0	-7.6	226.9
1973-74				

nominal terms. Nevertheless, once changes in costs and prices are taken into account, it is estimated that a real increase resulted.

Among the primary components of GDP, exports showed the largest increase for 1974. The increase, due to both price changes and increases in volume, increases in real terms by 30.5 percent. It should be noted that the relative export share for copper in spite of increased export prices and volume declined to 76.5 percent in 1974 from 82.3 percent in 1973. This reflects the growth of agro-livestock and industrial exports.

C. Monetary Policy and Inflation

The annual rate of inflation dropped from 694 percent in 1973 to 376 percent in 1974. To achieve this slowdown in prices the government resorted to a restrictive monetary policy. In fact, the supply of money declined faster than prices, which reduced the amount of real money in the economy to such a low level that it became detrimental to both human and physical capital through a reduction in real wages and a short-term investment incentives. This decrease in liquidity was probably offset somewhat during the second half of the year as rapid financial intermediation (both banking and non-banking) reduced the demand for money.

As seen in Table 10, the money supply increased continuously from 200.9 to 499.7 percent between March 1973 and February 1974. The intensity of this expansion was greatest between September 1973 and February 1974 as the government took other actions to reduce the rate of inflation. These actions which produced greater pressures for a more rapid expansion of the nominal money supply included: bringing the value of the escudo into real parity with 1969-70; freeing most producers from price curbs; eliminating most subsidies and granting wage increases.

The money supply began to turn down in March '74 as it fell from a high of 499.7 percent in February to 190.7 percent in November. In December the

money supply increased 30 percent to meet the Treasury's seasonal financial needs. While the long-run goal of this anti-inflationary monetary policy is to increase the real liquidity of the economy, it has in the short run, due to the inflationary process, resulted in a sharp reduction in liquidity. Hence, the rates of money to GDP fell from 39.1 percent in 1973 to 25.1 percent in 1974.

Other changes undertaken by the monetary authority in 1974 relating to financial and monetary policy have been:

1. recognition of the need to accelerate the level of non-inflationary financing of the public sector by placing Treasury issues in the financing markets;
2. undertaking institutional reforms to stimulate capital markets;
3. revising the credit policy to regulate the volume of money in the economy by abandoning the system of qualitative controls in favor of legal reserve requirements;
4. allocation of bank credit based on economic and financial criteria rather than the system of select credit for favored economic activities.

Finally, to provide for maintenance of real purchasing power in the financial markets, Decree Law 455 of May 13, 1974 was an important step. The decree ended the need for special legislation for issues of indexed-linked instruments and provides for distinctions among short-, medium- and long-term instruments. Under the law, short-term instruments are those that mature in less than one year and are not indexed while medium- and long-term instruments are indexed.

TABLE 10

CHILE: ADJUSTED CURRENCY ISSUED BY CENTRAL BANK

	Annual Change	Millions of Escudos
1973 March	200.9	74,532
June	323.5	119,952
September	378.3	167,928
December	461.6	311,189
1974 January	456.3	359,942
February	499.7	415,709
March	474.9	428,462
April	458.7	473,516
May	445.8	531,176
June	365.6	558,156
July	319.9	623,848
August	296.4	665,602
September	352.9	760,562
October	357.0	832,787
November	190.7	904,527

Source: "Sintesis Monetaria" of the Central Bank of Chile.

D. Wage Policy

In outlining the wage policy for 1974, the government's objective was to maintain, through a flexible wage, real purchasing power not below the average for 1973. During the year the objective was achieved in only four out of the twelve months. For the first half of 1974, the real wage was 91.7 percent of the 1973 average and 97.6 percent of the second half. While these results describe an average situation, they do represent a deterioration in the level of well being and give reason for concern for employees in those sectors whose relative income is below the national average.

In a recent study by ODEPLAN it was found that 20 percent of the population or 1,916,000 lived in conditions of extreme poverty. Of this group, 67.8 percent lived in urban, and the rest in rural areas.

The income policy of the government, through the distribution of wage adjustments and special bonuses, had been designed to reduce the impact of price increases on the low-income sectors.

However, the question of income becomes more difficult as unemployment increases. Part of this increased unemployment is the result of the gradual elimination of disguised unemployment and the unemployment linked to the slowdown in the industrial and construction sectors. To help alleviate the unemployment problem, the government has established for both public and private sector workers, a system of severance subsidies.

E. Fiscal Policy

In 1974, preliminary steps were taken by the Government to improve the efficiency of the tax system. However, the significant results achieved during the year were primarily due to the rapid increase in national income, the improvement in the tax control and collection system, and the renewed importance of revenue from the copper mining industry. The results

for the year included: a) a 55.7 percent real increase in current revenue; b) a 29 percent real increase in current expenditures, which resulted in a surplus on current account; and c) a decrease in the fiscal deficit, in real terms, by 7.5 percent between 1973 and 1974. As a result of the reduction in the deficit, Chile was able to reduce the proportion of total expenditures financed with internal loans. In addition, during 1974, treasury notes, approximately 10 percent of the government's internal credit needs, were issued and placed in the capital market. While the size of this placement is relatively small, it does have important implications for future fiscal financing.

Table 11 highlights in real terms the projected budget figures for 1975. While it is designed to consolidate the progress already achieved in 1974, the success of this fiscal program will depend, to a large extent, on the following: a) the prompt introduction and efficient administration of tax reform, which should increase the overall tax yield in real terms by 350,000 escudos; b) greater tax revenues from copper, despite a decrease in price; c) substantial reduction in number of government employees, approximately 30,000 fewer than in 1974; and d) a substantial decrease in government transfer and capital payments.

If progress is made in the above areas and the measures to improve the tax collection system are successful, current revenues should increase approximately 21 percent.

As indicated in the same table, real expenditures are expected to grow by 2.6 percent in 1975, the fiscal deficit would rise to 15 percent of total expenditures and 4.8 percent of GDP the lowest level since 1970.

F. External Sector

The future course of Chile's economic development is decisively tied to

TABLE 11

CHILE "COMPARISON OF THE FISCAL SITUATION IN 1974 AND 1975"
 (in billions of Escudos, at 1974 prices and in percentages)

	1974	1975	<u>a/</u> Percentage Change
1. <u>Current Revenue</u>	<u>2,035.8</u>	<u>2,327.2</u>	<u>14.3</u>
a. Tax	1,622.9	2,071.9	12.8
b. Copper	150.3	196.2	30.5
c. Other	262.6	59.1	-77.5
2. <u>Current Expenditures</u>	<u>1,712.7</u>	<u>1,757.4</u>	<u>2.6</u>
3. <u>Surplus on Current Account</u>	<u>323.1</u>	<u>569.8</u>	<u>76.3</u>
4. <u>Capital Expenditures</u>	<u>825.4</u>	<u>776.1</u>	<u>-6.0</u>
5. <u>Service of the Public Debt</u>	<u>154.0</u>	<u>309.0</u>	<u>101.2</u>
6. <u>Total Expenditures</u>	<u>2,692.1</u>	<u>2,843.4</u>	<u>5.6</u>
7. <u>Fiscal Deficit</u>	<u>-656.5</u>	<u>-516.2</u>	<u>-21.4</u>

A. Estimate

the country's ability to diversify and stimulate a steady growth of foreign trade and financial flows. Consequently copper, which accounts for more than 70 percent of the country's exports, as well as Chile's external economic policies and relations may well be the determining factors that will decide whether the country grows or stagnates. The measures adopted by the new government in 1973 were, in part, designed to achieve these results by making Chile's domestic activities more competitive in international markets.

1. Exchange Rate Policy

Since October 1973, the nominal exchange rate has been adjusted upward eleven times. The exchange policy is designed to maintain a constant real exchange rate by fixing the nominal rate in accordance with changes in the domestic and external price levels, thereby eliminating resource allocation distortions and distortions in imports and exports due to an overvaluation of the escudo. In addition, Chile's difficult system of multiple exchange rates was eliminated in favor of a two exchange rate system.

2. Tariff Policy

With respect to tariff policy, the revised economic program included a number of marked changes designed to modernize the productive structure, to encourage efficient resource allocation, and establish a level of protection that will provide the economy considerable opening to international trade. Specifically, the new tariff policy consists of the following:

- a) The gradual reduction of tariff duties as well as all differential treatments of importable goods, whether these treatments be in the fiscal, credit or exchange areas.
- b) The elimination of administrative restrictions.

- c) Elimination of discriminatory tariff treatment of private sector enterprises. (They will enjoy the same rights as state or mixed enterprises).
- d) Revision of tariff exemptions by geographical zones, economic sectors, or types of activities, in accordance with the principles and objectives of the tax reform in general.

1. Export Promotions

To increase the volume of nontraditional exports, Chile in November 1974 established the Export Promotion Institute. The principal functions of the institutute are as follows:

- a) To undertake studies and disseminate conclusions on external markets.
- b) To advise firms on export promotion opportunities.
- c) To help establish and support export organizations.
- d) To assist in establishing of standards for exports.
- e) To provide information to exporters as well as importers regarding credits, indorsements, and insurance.
- f) To provide information and serve as an intermediary for obtaining credits or loans to promote exports.

4. External Investment

To increase the volume of direct foreign investment, Chile has undertaken several measures. First, the government has come to an agreement with the large copper mining companies -- Ceris Corp., Anaconda Corp., and Kennecot Corp., -- for setting and paying compensation that arose from nationalization of the mines. Secondly, Chile issued in July 1974 Decree Law 600, which established a Foreign Investment Committee to be the only organization authorized to handle matters relating to foreign invest-

ment. Under the new law authorized investments will be governed under contract for a period of ten years following the start of production with provision for a ten year extension. The new law further guarantees that foreign investors will not be discriminated against in the areas of taxes, payments to the government, amortization or depreciation. The law also permits foreign companies the right to remit profits and dividends abroad and to repatriate their capital. Finally, in instances where the new laws amend existing contracts, a special court has been established to compensate foreign investors for any losses.

5. External Debt.

By the end of December 1974, Chile's medium-and long-term external debt amounted to U.S. \$3,578 million. During 1974 the debt increased by 16.1 percent which compares with 15, 16, and 12 percent, in 1971, 1972, and 1973, respectively. In itself, this increase is not a serious problem. What is troublesome, however, is that 41 percent of the gross balance will mature in the next four years.

The external debt situation by country and type of creditor as of the end of 1974 is shown in Table 12. The countries consisting of the Paris Club held 83 percent of the debt with the United States holding more than 61 percent. The second most important group of creditors were the multinational lending institutions holding 6.8 percent of the external debt. Of these institutions, the IBRD is the institution with the largest share.

Of the outstanding external debt, 28.2 percent represented loans previously renegotiated; 24.9 percent in loans with government agencies; 16.8 percent in supplier credit; and 16 percent in loans related to nationalization.

In recent years a number of factors have contributed to a perverse

external payment situation which prompted Chile to seek considerable renegotiation of its external debt in 1972 and 1974.

The 1972 debt renegotiation included 70 percent of the loans which matured, but not paid off between November 1971 and December 1972. This amounted to U.S. \$244 million, with special arrangements for an additional U.S. \$234 million of which U.S.\$211 million was relatively short-term debt with American banks.

The renegotiations of both 1972 and March 1974, with the Paris Club, involved only official loans and insured suppliers credit not previously renegotiated with a maturity of more than one year and less than 40 years. The earlier renegotiation included that debt servicing which matured between January 1, 1973 and December 31, 1974, in excess of U.S. \$1 million. In addition, Chile agreed not to renegotiate loans contracted after January 1, 1974.

The terms of the 1974 renegotiation obligated Chile to pay 80 percent in 14 semi-annual payments beginning January 1, 1977, with the remaining 20 percent as follows: 5 percent in 1974, 5 percent in 1975, and 10 percent in 1976. The rate of interest was negotiated bilaterally with the individual country involved.

As indicated elsewhere in this paper, it will be necessary for Chile to renegotiate its external debt once again in 1975. This renegotiation will likely include the debt to the socialist countries as well as other Latin American countries.

Considering Chile's economic structure and geographic location, it will be necessary for the country to strengthen its trade and financial ties with the rest of the world. Table 13 projects Chile's balance of payments and external capital needs for the next three years to exceed U.S. \$3 billion

TABLE 12

132-A

CHILE: EXTERNAL DEBT ^{a/} BY COUNTRY AND TYPE OF CREDITOR AS OF THE END OF 1974
 MEDIUM AND LONG-TERM
 (in Millions of U.S. \$)

	Government Agencies	Private Banks and Financial Institu- tions	Sup- pliers	Natio- nali- zation	Re-ne- gotia- tions	Others	Total	
							Value	Percentage
Multinational Agencies						<u>244.1</u>	<u>244.1</u>	<u>6.8</u>
IDB						61.7	61.7	1.7
IBRD						126.2	126.2	3.5
OTHERS						56.2	56.2	1.6
Countries								
1. Club of Paris							<u>2 966.0</u>	<u>182.9</u>
Federal Republic of Germany	75.2	0.5	34.4	3.1	106.8		220.1	6.2
Australia			4.3				4.3	0.1
Austria		1.3			3.9		5.2	0.1
Belgium		44.4	51		12.0		21.5	0.6
Canada	11.8	3.5	1.6	2.0	9.0		27.9	0.8
Denmark			5.6		5.4		11.0	0.3
Spain	7.5	1.9	42.3	0.9	32.1		84.7	2.3
The United States	632.2	4.7	120.9	558.6	478.0	13.7	1 808.1	50.5
France	27.3	123.4	29.9	1.6	65.5		247.7	6.9
The Netherlands	13.8		7.3	5.6	5.6		32.2	0.9
The United Kingdom	26	84.1	79.6	1.0	77.3	10.4	255.0	7.1
Italy		2.1	34.9		81.1		118.1	3.3
Japan	9.6		72.2		11.1		92.9	2.6
Norway			3.6		2.4		6.0	0.2
Sweden	4.5		5.8		2.5		15.8	0.4
Switzerland		1.8	2.3		14.6	5.7	24.4	0.7

Table 12 (cont.)

132-B

	Government Agencies	Private Banks and Financial Institu- tions	Sup- pliers	Natio- nali- zation	Re-ne- gotia- tion	Others	Total	
							Value	Percentage
2. Latin America							<u>205.2</u>	<u>5.7</u>
Argentina	20.7		78.9				99.6	2.8
Brazil	10.8	72.1	20.0				102.9	2.9
Others	0.5	0.9	0.8		0.4		2.6	0.1
3. Socialist Block							<u>153.1</u>	<u>4.3</u>
USSR	30.1				69.0		99.1	2.8
Peoples Republic of China	15.0						15.0	0.4
German Democratic Republic	8.0				9.4		17.4	0.5
Romania	12.7						12.7	0.3
Others	9.0						9.0	0.3
4. Other Countries	0.2						0.2	0.0
Total	<u>891.5</u>	<u>228.6</u>	<u>601.6</u>	<u>572.8</u>	<u>1,009.1</u>	<u>273.9</u>	<u>3,577.6</u>	<u>100.0</u>
Total (percentage)	24.9	6.4	16.8	16.0	28.2	7.7	3 <u>100.0</u>	

a. Net balance, does not include balance to be used.

Note: Does not include: International Monetary Fund
 Short-term credits, less than one year,
 Capital contributions (DFL 258, DFL 1272, Arts, 14-15-16).
 Credits for balance of payments.

SOURCE: CORFO

not including service on debt incurred during this period or interest on new renegotiated debt.

The growth of imports projected for the three year period is approximately 4.1 percent per year. This figure includes the results expected from internal policies aimed at adjusting relative domestic prices to those prevailing in international markets, the accumulation of inventory during 1974, and a relatively low level of economic growth. The projected decline in food imports is associated with the expected improvement in agricultural output.

On account of the above trends the deficit in Chile's trade account may quite likely reach U.S. \$500 million in 1975. Assuming that extreme debt service for the same year will be almost U.S. \$700 million indicates an external capital requirement in excess of U.S. \$1,200 million, will be required. This is equivalent to 58 percent of the expected value of imports. Currently, the amounts of projected financing for 1975 would be:

	<u>Millions of U.S \$</u>
Financing of capital goods	337.0
Financial service of petroleum (IMF)	100.2
Standby credit <u>1/</u> (IMF)	95.3
Relief, renegotiation of debt <u>2/</u>	<u>282.0</u>
Subtotal	814.5
Balance to be financed	<u>442.5</u>
Total Capital Needs	1,257.0

¹ Subject to approval by the Board of Directors of the IMF.

² Assumes the payment in cash of 5 percent of the renegotiable balance.

TABLE 13

CHILE: EXTERNAL CAPITAL NEEDS, 1975-77
(In millions of U.S. \$)

	1975	1976	1977
1. Exported goods	<u>1,718</u>	<u>2,020</u>	<u>2,287</u>
a. Mining	1,295	1,527	1,742
- Copper	1,101	1,304	1,514
- Others	194	223	228
b. Agric. & ocean products	66	77	87
c. Industrial goods	357	416	458
2. Imports	<u>2,169</u>	<u>2,476</u>	<u>2,512</u>
a. Consumer goods and raw materials for food	429	447	371
b. Other intermediary goods	1,344	1,572	1,659
c. Capital goods	395	457	484
3. Nonfinancial services (net)	-41	-45	-45
4. Nonmonetary gold	3	3	3
5. Balance, trade account	-489	-596	-267
6. Remittance of profits	-25	-28	-40
7. Interest on credit lines	-50	-55	-60
8. Long-term debt service (for debt as of December 31, 1974)	-693	-695	-591
Capital needs <u>a/</u>	1,257	1,276	958

a. Does not include interest on 1975 renegotiations or service of debt contracted in 1975 and 1976.

Source: Central Bank of Chile (1975) and OAS Secretariat.

TABLE 14
Balance of Payments
(Millions of U.S. Dollars)

	<u>Export of Gas to ç Services</u>	<u>Imports of Gas to ç Services</u>	<u>Balance on Trade Account</u>	<u>Non- Factor Service</u>	<u>Net Factor Payment</u>	<u>Balance Current Account</u>
1968	911	857	54	- 13	- 215	- 174
1969	1,173	927	245	- 27	- 229	- 11
1970	1,112	1,001	111	- 26	- 189	- 104
1971	985	1,085	-100	1	- 121	- 210
1972	858	1,285	-427	21	- 95	- 501
1973	1,323	1,608	-285	- 36	- 125	- 446
1974						
	<u>Net Private Capital Inflow</u>	<u>Net Public Capital Inflow</u>	<u>IMF</u>	<u>Debt Relief</u>	<u>Change in Monetary Reserves</u>	<u>Errors and Omissions</u>
1968	42	187	-	-	- 38	38
1969	47	289	-	-	- 172	- 153
1970	-	384	21	-	- 110	- 191
1971	-	52	17	40	301	- 200
1972	-	21	18	213	319	- 70
1973	33	-109	-	356	231	- 65
1974						

The balance estimated to be financed is U.S. \$725 million. Of this amount U.S. \$282 million would represent debt relief, and the remaining U.S. \$442.5 million will need to be financed from external financial sources.

During 1974, the IDB, IBRD, and the IMF all provided assistance to Chile. While the speed of response has varied, the IDB approved a loan for U.S. \$97.3 million, the IBRD authorized U.S. \$13.6 million and the IMF provided the credit support agreed upon in the stand-by-agreement for the oil facility. For 1975 the IBRD program for Chile may be as large as U.S. \$80 million and the IDB program could reach U.S. \$70 million.

In 1975, the deficit that could exist, if Chile's financial needs are not met, would inevitably result in a reduction of economic activity and greater unemployment. If on the other hand her short-term financial requirements are forthcoming, the productive potential and policy design exists for medium- and long-term economic growth and development.

G. Concluding Economic Statement

Housing in Chile, for the most part, is dominated by the public sector and has had considerable impact on the overall level of economic performance. Preliminary estimates for the construction of housing indicate that this sector experienced a 10 percent decline in gross output during 1974.

On the basis of the 1970 census, Chile's housing needs are: (1) deficient stock 600,000 units; (2) new requirements due to population growth 32,500 units; and (3) annual additions to offset increases in deficient stock 11,750. Since construction capacity is estimated to allow for completion of about 55,000 units per year, an annual reduction of existing deficient stock by some 11,000 units would be possible. Given Chile's excess capacity in this sector as well as the employment generating benefits of housing investment, a U.S. \$50 million HIG loan would provide a non-inflationary stimulus to the economy.

Depending upon the price of copper, Chile's external financial requirements for 1975 will be between U.S. \$502 million and U.S. \$725 million. Of this amount, U.S. \$282 million will represent debt relief with the remaining U.S. \$220 million to U.S.\$443 million to be financed from external sources. In addition to the U.S. \$50 million HIG loans other U.S. Government bilateral assistance is likely to be U.S. \$23 million. For 1975 the IBRD program in Chile could possibly reach U.S. \$80 million and the IDB program could be between U.S. \$60 and U.S. \$70 million.

As indicated above the prospects for Chile's economic development are related to the sound implementation of the country's economic policies as well as the timeliness of external financial assistance. Given the long-run prospects for the price of copper and the country's balance of payments and capital requirements as indicated in Table 5 a U.S. \$50 million 20 year HIG loan is advantageous at this time. In fact, if Chile's 1975 external financial requests are not met the country will inevitably experience a reduction in economic activity and increased unemployment.

APPENDIX I

SUMMARY OF CURRENT SAVINGS AND LOAN ASSOCIATION REGULATIONS WITH RESPECT TO SAVINGS AND LOAN ACTIVITIES

SAVINGS

Deposits in savings accounts have the following benefits:

1. Readjustment

A readjustment is made yearly, on December 31.

2. Dividends

Up to five (5) percent per annum is paid on free savings (payable annually).

3. Insurance

The Caja Central provides insurance on the outstanding balance of savings accounts and its corresponding readjustment. Originally, the insurance covered accounts up to E 5,000. At present, it covers accounts up to E^o 604,761 (including the readjusted amount). The savings and loan association, in turn, pays the Caja a premium of 1/4% per annum on the yearly average amount of savings deposits being held by the association.

4. Tax Exemptions

Only readjustments on savings deposits are tax exempt. Deposits for more than a year are exempt from inheritance and donation taxes.

5. Legal Seizure

Deposits cannot be legally seized up to an amount of E^o 120,952 (including readjusted balances), excepting approved alimony claims.

6. Liquidity

Savings may be withdrawn in any amount with 60 days notice. In practice, associations generally accept withdrawals without any prior notice.

LOANS**1. Loan Applicants**

Loan applicants may be:

Individuals (savers)

Housing cooperatives

Companies with restricted liability (sociedades de responsabilidad limitada)

Autonomous state entities

Construction companies authorized by Caja Central

2. Loan Application Requirements

Individuals (savers) must:

Have a savings account with any of the associations for a minimum period of time determined by the regulations.

Have an outstanding minimum balance in the account (in an amount established by Caja Central).

Have no other outstanding mortgage loan on a home from an association, CORVI, or any other social security institution.

Have a family income, 25% of which is available for the debt service requirements of the proposed mortgage.

Housing Cooperatives - requirements are similar to individual applicants.

Companies with Restricted Liability - Law 205 (Art. 43, added by Law N° 15163, Feb. 13, 1963), requires that these companies are:

Non-profit institutions

Organized for the construction of "economic homes" only.

Have a maximum number of 20 members, capitalized from savings of its members, deposited with any association.

Further, they have to comply with similar requirements as set forth for individuals and cooperatives. Once the objective of the company is complete, (i.e., to construct a project), the company is automatically dissolved.

3. Maximum Mortgage Loans, Interest Rate and Closing Costs

At present, home loans in Santiago are governed by the following criteria:

<u>Appraised Value</u>	<u>Maximum Amount of Loan</u>
0 - E ^o 7,000,000	90%
7.000.001 - 12,000,000	85% + E ^o 350,000
12.000.001 - 31,812,500	80% + 950,000
Over - 31,812,501	E ^o 26,400,000

INTEREST AND CLOSING COSTS

<u>Amount of Loan*</u>	<u>Interest</u>	<u>Closing Fees (based on loan amount)</u>
0 - E ^o 6,000,000	4.0%	3.0%
6.000.001 - 12,500,000	6.0%	3.5%
12.500.001 - 15,000,000	7.0%	3.5%
15.000.000 - 17,000,000	8.0%	4.0%
17.000.001 - 20,000,000	9.0%	4.0%
20.000.001 - 26,400,00	10.0%	4.0%

4. Types of Loans made by the Associations.

Long-term mortgage loans for the acquisition, construction, addition, or completion of "economic homes". (An "economic home" is defined by Decree N^o 21959, by location, size-maximum 140 M² - materials and cost).

Construction loans for condominiums may be granted for a three-year maximum term. Caja Central may authorize the inclusion of commercial space limited to 20% of the total area of the structure. (Law N^o 16391, December 16, 1965). Builders are approved by the Caja Central.

5. General Summary of Mortgage Provisions

Criteria on permissible loan amounts are established by Caja Central and may not exceed 90% of appraisal value of the dwelling unit.

*Mortgage loans granted by the associations are guaranteed in full by Caja Central and the Government of Chile. Additional security is provided for mortgage loans by debtor life insurance equal to the declining mortgage balance, and by property fire insurance. Caja Central may directly assume the fire insurance or contract it through a private insurance company. In any event, a premium for mortgage insurance payable to the Caja is 1/2% per annum on the outstanding principal amount of the loan payable quarterly.

Interest rates on loans are established annually by Caja Central with the approval of the Minister of Housing.

Maximum term of loan amortization for each category of loan is determined by Caja Central. Presently, the term cannot exceed 30 years.

Mortgagors may repay their loan in full, or in part at any time. On a total repayment, mortgagors pay a readjustment penalty on the remaining outstanding principal balance.

Loans are secured by a first mortgage on the property. In special cases authorized by Caja Central, a second mortgage may be granted.

Mortgages on dwellings used as the family home by the mortgagor, constitute a superior lien on the property, and cannot be legally seized, except for debts for real estate taxes, paving assessments (pagos de pavimentacion), etc.

Mortgage loans are readjusted annually on December 31.

Mortgage loans are automatically insured by Caja Central.

Insurance on the debtor's life covering the unpaid principal balance of the mortgage is provided by Caja Central.

Fire insurance in favor of the association must be provided and maintained by the mortgagor. At present, coverage is provided by private insurance companies.

Late payment penalties may be assessed in an amount of up to 50% of the monthly payment.

The total unpaid balance of the mortgage may be legally due and payable when three consecutive monthly payments are delinquent.

APPENDIX II

TABLE 1

CITIES AND URBANIZED AREAS OF CHILE

ENUMERATED AND PROJECTED POPULATION: 1940 - 2000
(POPULATION IN THOUSANDS)

Table I, APPENDIX II

Province and City	1940	1952	1960	1970	1980	1990	2000
Chile Total	5,023.5	5,933.0	7,374.1	8,834.6	10,623.6	12,848.9	15,358.2
Aconcagua							
Province Total	118.0	128.4	140.5	160.8	178.4	198.1	217.1
Los Andes	12.4	19.2	20.4	27.4	33.5	41.2	49.2
Remainder	105.6	109.2	120.1	133.4	144.9	156.9	167.9
Aisen ^{1/}							
Province Total	17.0	26.3	37.8	51.0	68.8	92.6	121.4
Antofagasta							
Province Total	145.1	184.8	215.2	250.7	289.8	343.6	400.6
Antofagasta	49.1	62.3	87.9	124.8	158.7	195.7	234.1
Calama	5.0	12.9	26.2	44.5	64.4	87.2	112.4
Tocopilla	15.5	19.3	21.6	21.7	21.7	22.7	23.2
Remainder	75.5	90.3	79.5	59.7	45.1	38.0	30.9
Arauco ^{1/}							
Province Total	66.1	72.3	89.5	98.8	111.5	126.7	142.0
Nacama							
Province Total	84.3	80.1	116.2	152.3	199.2	247.1	305.0
Copiano	15.7	19.5	30.1	39.9	54.3	72.0	94.0
Remainder	68.6	60.6	86.1	112.4	144.9	175.1	211.0
Bio-Bio							
Province Total	127.3	138.3	168.7	193.0	221.9	254.6	288.8
Los Angeles	21.0	25.1	35.5	45.0	57.2	71.1	86.8
Remainder	106.3	113.2	133.2	148.0	164.7	183.5	202.0
Cautín							
Province Total	347.7	365.1	394.6	420.7	440.5	459.1	473.0
Temuco	42.0	51.5	72.1	111.1	143.8	171.3	197.8
Remainder	332.7	313.6	322.5	309.6	296.7	287.8	275.2

1/ The five provinces of Aisen, Arauco, Chiloé, Maule, and Malleco had no cities of 20,000 or more inhabitants in 1960.

(Cont. Table I)

PROVINCE AND CITY	1940	1952	1960	1970	1980	1990	2000
Chiloe							
Province Total <u>1</u> /	101.7	100.7	99.2	110.7	116.0	120.4	123.6
Colchagua							
Province Total	131.2	139.5	158.5	167.9	178.9	192.8	204.9
San Fernando	14.4	17.6	21.8	27.6	33.3	39.5	45.8
Remainder	116.8	121.9	136.7	140.3	145.6	153.3	159.1
Concepcion							
Province Total	308.2	411.6	539.5	638.1	776.5	968.4	1.186.8
Concepcion <u>2</u> /	160.1	265.6	356.7	455.7	585.4	766.8	977.0
Remainder	148.1	146.0	182.8	182.4	191.1	201.6	209.8
Coquimbo							
Province Total	245.6	262.2	309.0	336.8	370.3	409.3	446.7
Le Serene/Coquimbo	39.6	61.5	76.1	94.0	113.9	138.5	163.7
Ovalle	14.3	17.6	25.3	31.9	40.0	48.8	58.3
Remainder	191.2	193.1	207.6	210.9	216.4	221.9	224.7
Curico							
Province Total	81.2	89.4	105.3	113.7	124.2	137.6	150.3
Curico	21.1	26.8	32.6	41.3	49.9	59.7	69.9
Remainder	60.1	62.6	73.2	72.4	74.3	77.9	80.4
Linares							
Province Total	135.0	146.2	171.3	189.0	209.2	233.0	256.1
Linares	17.1	19.6	27.6	36.6	46.7	57.4	69.0
Remainder	117.9	126.6	143.7	152.4	162.5	175.6	187.1
Llanquihue							
Province Total	117.2	140.0	167.7	198.0	232.3	275.3	321.6
Puerto Montt	21.4	28.9	41.7	63.8	38.2	116.3	149.2
Remainder	95.8	111.1	126.0	134.2	144.1	159.0	172.4

2/ The Concepcion urbanized area includes the following cities and towns: Concepcion, Talcahuano, Coronel, Lota, Tome, and Penco.

(Cont. Table I)

PROVINCE AND CITY	1940	1952	1960	1970	1980	1990	2000
Magallanes							
Province Total	48.8	55.1	73.2	88.7	109.3	132.2	160.7
Punta Arenas	29.9	34.4	49.5	61.0	77.5	97.2	120.3
Remainder	18.9	20.7	23.7	27.7	31.6	26.0	40.4
Malleco							
Province Total	154.2	159.4	174.3	176.1	179.2	185.5	189.1
Maule							
Province Total <u>1/</u>	70.5	72.2	79.7	82.3	85.2	89.1	98.6
Nuble							
Province Total	243.2	251.3	285.6	314.7	343.7	374.7	403.6
Chillan	42.8	52.6	59.0	80.3	98.6	117.5	137.1
Remainder	200.4	198.7	266.6	234.4	245.1	257.2	266.5
O'Higgins							
Province Total	200.3	224.6	259.5	306.7	354.5	409.2	466.6
Rancagua	31.0	40.0	53.3	66.1	119.0	154.0	194.2
Remainder	169.3	184.6	206.2	220.6	235.5	255.2	272.4
Osorno							
Province Total	107.3	123.1	144.0	158.7	176.0	195.6	220.7
Osorno	25.1	40.1	55.1	66.0	80.6	99.6	194.2
Remainder	82.2	83.0	88.9	92.7	95.4	99.0	101.3
Santiago							
Province Total	1,268.5	1,754.9	2,437.4	3,217.9	4,217.4	5,478.0	6,962.2
Gran Santiago <u>3/</u>	952.1	1,350.4	1,907.4	2,850.0	3,902.5	5,171.6	6,667.7
San Antonio	11.9	18.4	26.9	36.1	48.8	66.1	87.6
Remainder	304.5	386.1	503.1	331.8	266.1	240.4	206.1

3/ The Greater Santiago urbanized area is comprised of the city of Santiago and the contiguous, incorporated communities of Providencia, Nunoa, San Miguel, Conchalí, Maipo, Qunita Normal, Renca, Quilicura, Parrencas, La Reina, La Cisterna, Las Condes, La Florida, La Granja, Puente Alto and San Bernardo.

(Cont. Table I)

PROVINCE AND CITY	1940	1952	1960	1970	1980	1990	2000
Talca							
Province Total	157.1	173.7	206.1	231.0	259.8	294.1	328.5
Talca	50.5	55.1	68.1	91.5	114.2	137.7	163.3
Remainder	106.6	118.6	138.0	139.5	145.6	156.4	165.2
Tarapaca							
Province Total	104.1	102.8	123.1	174.7	227.0	278.3	339.8
Arica	14.1	18.9	43.3	87.8	134.9	178.2	229.3
Iquique	33.1	39.6	50.8	64.3	76.7	89.0	102.8
Remainder	51.9	44.3	29.0	22.6	15.4	11.1	7.8
Valdivia							
Province Total	191.6	232.6	259.8	275.4	294.0	325.7	354.1
Valdivia	34.5	45.1	61.1	61.3	67.2	77.6	87.7
Remainder	157.1	187.5	198.7	214.1	226.8	248.1	266.4
Valparaiso							
Province Total	425.1	498.2	617.5	727.0	860.1	1,023.8	1,202.6
Quillota	17.2	24.8	29.4	35.0	41.6	51.4	62.2
Valparaiso ^{4/}	290.6	337.7	410.6	478.0	557.4	654.7	758.7
Remainder	117.3	135.7	177.5	214.0	261.1	317.7	381.7

^{4/} The Valparaiso urbanized area includes the following cities and towns: Valparaiso, Vina del Mar, Villa Alemana, Quilpue.

APPENDIX IIILIST OF ACRONYMS

CCAP	Central Savings and Loan Bank (Caja Central de Ahorros y Prestamos)
CCC	Chilean Construction Chamber (Camara Chilena de la Construccion)
CD	Christian Democratic Party
CIDU	Interdisciplinary Center for Urban and Regional Development in Chile's Catholic University (Centro Interdisciplinario de Desarrollo Urbano y Regional)
CORHABIT	Corporation for Housing Services (Corporacion de Servicios Habitacionales)
CORMU	Urban Renewal Corporation (Corporacion de Mejoramiento Urbano)
CORVI	Housing Corporation (Corporacion de la Vivienda)
COU	Urban Works Corporation (Corporacion de Obras Urbanas)
ENDESA	National Electricity Company (Empresa Nacional de Electricidad, S.A.)
ENOS	National Sanitary Works Company (Empresa Nacional de Obras Sanitarias)
F.V.A.S.	Housing and Social Assistance Foundation (Fundacion de Vivienda y Asistencia Social)
HABITACOOP	Housing Cooperative (Open Coop)
IFICOOP	Cooperative Finance Institute (Bank)
INVICA	Institute of Popular (Cooperative) Housing
MINVU	Ministry of Housing and Urbanism. (Ministerio de la Vivienda y Urbanismo)
ODEPLAN	National Planning Office (Oficina de Planificacion Nacional de la Presidencia de la Republica)
ORPLANES	Regional Level Offices of ODEPLAN (Oficinas Regionales de Planificacion)
PAP	Popular Savings Plan (Plan Nacional de Ahorro Popular)

Appendix III (Cont.)

SINAP	National Savings and Loan System (Sistema Nacional de Ahorros y Prestamos)
SODIMAC	Cooperative Building Materials Distribution Society
TECHNICOOP	Technical (Service) Cooperative
UP	Popular Unity Party