





CHAPTER 6

***CONCLUSION
AND RECOMMENDATION***

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6.1 Conclusion

(1) The study area inhabiting over one third (1/3) of national population plays an important role on the national economy as a major area on fresh food supply to the capital areas and export crop cultivation. Recent progress of the national economy is accelerating an expansion of infrastructure regarding land and water, which are to utilize for non-agricultural purpose, and invading to farmland and using irrigation water mostly occurs its expansion. Also, agriculture in the study area involves structural problems caused by the scale of land holding such as a gap on infrastructure of farming and management among the farmers. It is urgently required that increase of agricultural productivity including the development of new irrigated land in the existing farmland in order to maintain stable supply of fresh agricultural products to the capital market and to play role of major production area for export agricultural cultivation.

(2) Through the study on present situation of the objective area, problems inherent in the regional agriculture are recognised as difficulties of farm management on small scale farmers, tightness and competition of water utilisation, pollution of irrigation water and decrease of farmland. Measures to solve such problems, master plan of "Agricultural development and water management in Metropolitan area" targeted year 2010 is studied comprising of promotion of agriculture, effective use of natural resources and environmental conservation. In the study, development scenarios of the study area are set up on the basis of the newly usable water resources development alternatives. After evaluation of each scenario in view of the social and economical impacts, optimum scenario is proposed as the master plan to develop the study area. Major components of the master plan consist of the following;

- 21,550 ha of new irrigation area using the newly constructed small dams and unused water rights,
- structural rehabilitation on 5 existing irrigation systems commanding of 103,088 ha,
- water quality improvement related to 15 existing irrigation system, and
- improvement of rural living condition composing rural water supply, rural sewage works and rural road improvement.

6.2 Recommendation

(1) In the proposed new irrigation plan on the middle and the lower streams (the second and the third sections) of the Maipo river, integration of the existing intake structures is planned in connection with the rehabilitation works of the existing irrigation systems. Those intake structures of the existing irrigation system are scattered at present in the second and the third sections of the Maipo river. Recently, preparation of establishing the "Junta de Vigilancia" for adjustment of water utilization among water users is going on in the second and the third sections. Integration of the intake structures proposed in the master plan supports from the aspect on facilities for adjustment of water utilization among the users. With these views, it is recommended to execute the project urgently.

(2) In case of Chile, water is belong to personal property based on the water right. It is also a social common capital . In other word, its perception is that it is important for construction, management and preservation of the property essential for existence of human life. Therefore, it is necessary to take legal measures for punishment in somehow for the purpose of effective use of limited resources against to unused water right and reusable water right.

(3) Water quality improvement of canals drawing water from the Mapocho river is to be benefited entire environment of rural livings on not only economic factor such as crop diversification and maintaining quality of products for export but also health care and reduction of malodorous etc. Environmental improvement works is required to execute as public works by utilizing government fund because it is difficult to carry out as the projects of private sector and is required large amount of investment compared with the benefit obtained directly.

(4) Active situation of recent export agricultural market has accelerated development of new farmland and water source for cultivation is mostly depend on groundwater due to the condition of development area. Such situation showed decline of water level and interference of groundwater, and some area take an action to control for new groundwater development in the study area. Groundwater development under the present situation is not possible for large scale agricultural development. Groundwater utilization shall be limited only to small scale development or supplemental use taking the fostering amount into account.

(5) Decrease of water losses in major facility of present irrigation systems, especially lining of main canals, is to increase availability of water use at farm level. Irrigation is shared majority of water use in the study area and effects of saving water is high, therefore, positive promotion of improvement on major facility of present irrigation system is proposed.

(6) Conversion of land use from farmland to urban use is irreversible. Farmland located in urban area is commonly involving alteration factor to the urban land use. Based on the expanding metropolitan economic bloc, alteration of land use is accelerated at the farmland in the study area located the suburbs of metropolitan area. This phenomenon is occurred by the demand on expansion of urban land use from the urban side, and abandonment of agricultural land use due to aggravation of farming condition. Aiming at the balanced development between urban and rural areas, conservation plan of the farmland located the suburbs of metropolitan area should be taken along with the present urban planning. In view of the market oriented economy, strengthening of the regulations from the taxation system is required for the land acquisition, alteration on purpose of utilization and so on.