THE CIAPEP AND ITS CONTRIBUTIONS TO THE PROFESSION

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1. INTRODUCTION

The Inter American Course on Project Preparation and Evaluation (CIAPEP, in Spanish) has a predecessor that started in 1976, as part of a bilateral technical cooperation agreement between the Inter American Development Bank (IDB) and the National Planning Office of Chile (ODEPLAN): the IDB-ODEPLAN Course, which was given in 1976 and 1977. That agreement triggered my return to Chile from the Organization of American States (OAS) in Washington, U.S.A. where I directed a technical assistance program on Social Evaluation of Projects and Investment Programming (a three-month course and an expert in residence for one year) from 1971 to 1976, a program which was implemented in 21 countries, including Chile. The IDB-ODEPLAN agreement stipulated that the program was to be installed at the Economics Institute of the Catholic University of Chile and that I was to be its Director.

Despite efforts to renew the program by turning it into a regional program, it ended in 1978. Roberto Kelly, Minister Director of ODEPLAN, obtained the necessary resources from the government of Chile to execute the regional project Chile had presented to the IDB: “If they don’t want to finance it, Chile will, with 15 fellowships for foreign participants!”† This new Training Program continued at Católica and besides the CIAPEP, it also included four Intensive Regional Courses a year (22 working days long, with three examinations). These were each to be offered in one Region with participants from two adjacent regions, thereby covering the national territory every year.

The contents and format of the CIAPEP were basically the same as its predecessor: a Theoretical Phase, consisting of four and a half months, and a Practical Phase of five and a half months, both of which required full-time dedication by the participants. A maximum of 45 professionals from the public sector, universities, the Armed Forces and from Carabineros (the Chilean Uniformed Police) were admitted to the Theoretical Phase, and a maximum of 32, to the Practical Phase. Eight modules were taught during the Theoretical Phase on the basis of “total immersion” in the subjects contemplated in each: a specific number of weeks fully dedicated only to that subject, with daily exercises and written examinations on Saturdays (a total of 16), which by “tradition and doctrine” not everyone passed. Four projects suggested by the Government were evaluated in the Practical

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† Fellowships for foreigners were eliminated in 1991, but they were maintained for participants coming from regions (provinces) other than the Metropolitan Region.
Phase. Participants were divided into four work groups, with seven or eight people in each. A supervisor was in charge of every group, and students’ performance was graded once a week by an Executive Committee, composed by the four Supervisors, the Assistant Director and myself. Preliminary versions of these studies were presented to Evaluation Panels, made up of specialists in each subject, during five sessions with a day and a half for each project. My dear friend, Professor Arnold C. Harberger (Alito), always participated on two of these Panels in all of the courses that were taught since 1976.

About 1,100 professionals have graduated from the IDB-ODEPLAN and the CIAPEP. One hundred and sixty of them were foreigners; 790 took the whole, and 310 only took the Theoretical Phase. More than 2,200 professionals have graduated from the Intensive Regional Courses.

The annual budgetary cost of the CIAPEP was approximately 9,500 UF (220,000 dollars); in order to obtain its total cost, the participants’ salaries should be added to this, which would practically double the budgetary amount. Since four “well”\(^2\) evaluated projects are delivered to the government, the cost of each study is about 110,000 dollars. The panelists always thought that this figure was significantly lower than the amount consulting firms would charge for most of the studies conducted by the CIAPEP.

A total of 106 projects of interest to different governments of Chile have been evaluated in the two courses, since five projects were evaluated on two occasions, instead of four. Generally, following the tradition imposed by Miguel Kast R. –Deputy Director of ODEPLAN and a great promoter of this program– at least one “social” project was included every year, related to the attack on poverty, if possible. In the first BID-ODEPLAN course, an evaluation was made of what he named “Comprehensive Care Centers for Minors (from 2 to 6 years) in Extreme Urban Poverty” (CAI, in Spanish). The appraisal of this project brought about the first significant contribution of our program to the profession: Basic Needs.

2. Basic Needs

The project consisted of providing nutrition, early stimulation, and basic health services to children from urban families in extreme poverty. A comparison was made of the academic results of children who had attended a similar program given by a nuns’ “school” with those of children who went directly into primary school, and it was proven that the performance of the former was significantly better than the latter. The social evaluation of the project, however, yielded very disappointing results –with rates of return that did not exceed 1%– because the

\(^2\) It is common knowledge that many consulting firms are hired to demonstrate that the project suggested by the client is profitable; they’d better not say the opposite! This explains why governments have often used the CIAPEP as an arbitrator, asking us to study projects that were politically “delicate.” It is highly satisfactory to see that our results have been used either to push or detain projects of that kind.
benefits (higher earned income) occurred much later in time. This was true despite the fact that costs were reduced to a minimum, especially in infrastructure, personnel (only one nursery school teacher, with many assistants), and food that was rich in proteins and calories, but low in cost.

On the Evaluation Panel, Professor Harberger had a bright idea, and he told us two things. First, that the child who was fed was receiving an immediate benefit (“a full tummy and a happy heart”) and, second, that the social benefit of feeding him was higher than the private benefit perceived by the child and his family, because the fact a child which is well nourished generates an externality on the rest of the community, owing to the feelings of solidarity that characterizes the human being. And, as he always does, the Professor stepped up to the whiteboard and drew the private demand curve (of the child and his family) and, above it and to its right, drew what he called the “social demand” for a Basic Need, the area under which measured the benefit to society from giving that child a minimum level of nutrition. The mere fact of subtracting food costs from the total costs of the CAI lead us to conclude that the social profitability of the project was significantly higher than the 12% required at the time by ODEPLAN, to the great satisfaction of Miguel Kast and all of us.

The notion of basic needs was used afterwards in the evaluation of Basic Housing and Day Care Centers (CAD) projects, as well as projects involving potable water and evacuation of sewage, either through sewers or septic tanks, establishing the minimum consumption of potable water that would constitute a “basic need.”

3. The “Separability” Of Projects

“Identifying the goose that lays the golden egg is fundamental to prevent that a ‘good’ project could be hiding a ‘bad’ project under its wing; to separate the good project from the bad one will prevent the approval of both of them (of the integrated project)” is one of the maxims that has been emphasized again and again in our training program.

3.1. In irrigation projects

By tradition and doctrine, professionals who prepared irrigation projects in Chile based them on the premise that, given the source of water (river or dam), the maximum area possible should be irrigated with 85% irrigation reliability (“seguri-

3 There is not doubt in my mind that the CIAPEP proposals were determining factors in the design of the law that establishes a municipal subsidy on the consumption of potable water by families catalogued as “indigent” (a subsidy of 75% of the rate, up to a given maximum of cubic meters per month, defined in that law as “basic need”). The investment in sewage evacuation is justified by the greater social consumer surplus obtained from the fact that, by reducing the “nuisance costs” of consuming (and evacuating!) potable water, those investments encourage an increase in its consumption.
dad de riego”, in Spanish), even whether it were necessary to pump in order to irrigate higher areas or whether tunnels and long canals were required to irrigate other areas. Irrigation projects were usually presented as “comprehensive” (“integrales”, in Spanish), including technical assistance to teach irrigation and to encourage the crop compositions and rotations that the project designer—usually a desk farmer—thought was most profitable for the farmer on his newly irrigated land. Usually, these “comprehensive” projects were shown to be profitable: the profitable parts of the project “hid under their wing” the separable non-profitable projects of pumping water to high areas and the extension of canals to areas located too far from the source. By means of dynamic programming models it can be established whether or not it is advisable to irrigate a given “irrigation sector”: if the increased agricultural surplus “with irrigation” versus “without irrigation” is sufficient to “pay” for the additional investment required to achieve it, then it is worthwhile to do so.

But, the goose that lays the golden eggs—as it was in one of the projects studied in the CIAPEP—could possibly be the program of teaching irrigation practices and techniques to farmers, such that the project of giving them more water might not be profitable at all. On the other hand, to assume that farmers were going to adopt the crops designed by a desk agronomist proved to be absurd in more than one of the projects studied in CIAPEP. Rather, our students chose to use the crops actually adopted by farmers in irrigated areas with similar agroclimatic characteristics—or in the same area of the project, since there is always one part of that area that is irrigated—thereby reducing their supposed profitability.

Another pioneering idea was distinguish between (i) permanent crops (fruit trees and seeded pastures), (ii) annual crops, and (iii) natural pastures, since for (i)—which generally are the most profitable—the farmer demands irrigation reliability of about 100%. It was shown that the amount of land devoted to annual crops was variable year to year, depending on the local farmers’ expectations of the availability of irrigation water in those springs and summers, which were based on amount of snow accumulated in the mountains during the respective winters.

3.2. In road transportation projects

In the road transportation sector, the separation of (or distinguishing between) different sections (“tramificación”, in Spanish) of the road or highways was always emphasized in our Program, either because of different traffic volumes (benefits) in some of them, or because of different geometry and topography in others, or because of different construction costs. Our participants were taught that those sections where maybe four or more lanes would be justified should be evaluated separately from others, such as those where only two lanes would be justified, or even those where paving just one of them would be justified, leaving the other one with a standard of gravel, and also of those sections where, because of the incline, three lanes would be justified instead of two, or five instead of four.

In 1981, the Ministry of Public Works presented to ODEPLAN and to the IDB a project to finish the highway between Santiago and the port of San Antonio,
and several summer resorts and fishing coves by the beach. This road had been transformed to a four lane highway from Santiago to just a few kilometers short of Melipilla, located at more of less half the distance between Santiago and the Coast; thereafter, it had only two lanes. The evaluation of this project, conducted by a prestigious consulting firm, showed a higher rate of social return than that required by ODEPLAN. The main benefits were attributed to significant savings in travel time, especially during 14 (summer and holiday) weekends a year, given the considerable congestion produced by increased traffic volumes at those times and the geometry and topography of the land of the two-lane highway from Melipilla to San Antonio. The CIAPEP work group divided the project into four sections, the first of which was to construct the four lane highway to the town of Melipilla, an important generator and attractor of trips all year long. In the other three sections of the old road, the group proposed twelve “little projects” to improve the standard in some parts of them, such as, for example, the inclusion of a third lane in sectors where the incline or curvature caused major congestion. The inclusion of these projects would result in significantly reducing travel times in the “without project situation” and, therefore, in reducing the benefits attributable to the new four lane highway between Melipilla and San Antonio. The results lead us to recommend the immediate construction of the extension in the four lane highway to Melipilla, and to study the other three sections of the project again in a period of no fewer than eight years, since it was not at the time socially profitable execute them. It was so satisfying to see that our suggestions were accepted.

*Nuisance costs* during the execution of the road building works had never been included in the calculations of the relevant costs for decision-making, in spite of the fact that they are especially important in urban road projects. These costs grow as time goes by—because traffic normally increase as times goes by—so that postponing their construction leads to an increase in their total costs; thus, these investments ought to be initiated at a moment in time which antecedes that moment which is derived from not contemplating these added costs. A case in question was a project to build an underpass in a very congested intersection in Las Condes, where—because of lower nuisance costs—the *total social cost* of building it with tunnels turned out to be cheaper than doing it with trenches, whereas the budgetary cost was lower for the second construction method.

### 3.3. In port projects

In the case of port projects, separability is particularly important in defining the “without project” situation so as to avoid assigning benefits to the project that could be obtained from substitute projects. In 1978, a project prepared and appraised by a prestigious consulting firm to build a new berthing site so as to expand the capacity of the port of San Vicente in Region VIII was been justified to ODEPLAN by claiming that its Net Present Vale was positive for the discount rate required by ODEPLAN. The study took as given the actual cargo transfer times to and from vessels and stockpiles, and it assumed that the port would continue working with only one shift, with a maximum of 11 hours a day, including overtime.
It seemed obvious to the respective CIAPEP work group that this port’s capacity could also be increased by executing four separable projects: (1) decongesting its esplanades, by increasing storage fees; (2) putting in cranes to complement the ones on the vessels; (3) increasing fees for the use of berthing sites, and doing it on the basis days by meters of LOA (length overall) of the vessels using them, and (4) issuing a larger number of permits for port workers, thereby enabling the port to work with more than one shift. The first three measures would increase cargo transfer times, whereas all of the measures would reduce the lay days of vessels at berthing sites. Since the benefits of increasing port capacity accrue in terms of reduced Ship Turnaround Time (STAT), the execution of these four projects obviously reduced to almost nil the benefits that had been calculated by the consultants for the new berthing site: they by themselves significantly reduced STAT, without having to execute the project of a new berthing site. Thus, the recommendation of the work group was that the construction of the new berth should be postponed by at least 12 years if the port were operated with three shifts. It was also very heartening to see that the project was indeed postponed.

4. The Golden Rule

One of the most important rules in project evaluation is that “the value assigned to the benefit of a project cannot be greater than the cost of obtaining the same benefit through an alternative project.”

4.1. In the courts

In 1986, we were charged with evaluating the advisability of introducing in the Courts of Justice the use of computers for (1) following the advance of the cases on trial, (2) processing legal texts and (3) establishing juridical and judicial data bases, since Courts were congested and overloaded because of an increased number of cases. The procedure our students used to calculate the benefits was to estimate the number of working hours that could be saved per day by installing computers in 30 actual Courts. The conclusion was that the capacity of each Court for processing cases would be increased by at least 30%. Thus, the benefits were estimated as the cost that the country would incur to install and create the number of new courts necessary to reach the same increase in capacity as could be achieved

4 The decision-making criterion for highways and ports is not the NPV or the social IRR (TIR), since the question that has to be answered in these cases is “when is it advisable to expand their capacities?”; in other words, the criterion should be to establish the optimal year to start the project. The so-called “short-sighted rule” for projects whose benefits increase with calendar time is that the project should be executed in the year when its TRI (Instantaneous Rate of Return) is equal to or higher than the discount rate. This is something in which the CIAPEP has had an influence; today, the consultant in Chile is required to establish the optimal year of its execution, not its NPV or IRR.
by applying these computerized systems. The CIAPEP group presented the results of this study at a special meeting with the Minister of Justice and the Director of the Budget, after which funds were allocated to start implementing it gradually.

4.2. In the decontamination of waters

One of the benefits attributable to the decontamination of the Mapocho River, which runs through Santiago, is the reduction in the cases of typhoid fever, some of which are fatal. Typhoid fever is spread in this case by the so-called “long cycle”: a carrier’s feces, poured into the river, stick to crops that are irrigated with that water and which are consumed raw, thereby infecting its consumers. The way that was chosen to measure and put a value on the benefits associated with a lower rate of typhoid fever was to calculate the cost to the country of prohibiting the farming of those particular vegetables in areas irrigated by the Mapocho River. The figure turned out to be quite insignificant!

4.3. In projects for Carabineros (Chilean uniformed police)

CIAPEP has evaluated four projects for Carabineros de Chile, all related to measures to increase “police vigilance (presence)”: the purchase of motorcycles and squad cars (1979); automation of certain police procedures by means of computers and the interconnection of police units (1996); optimization of their resources, including the elimination of police stations and certain tasks that can be transferred to third parties (1998), and optimization of resources used in support tasks (1999). How can one quantify and value the benefits of the increased police vigilance resulting from these?

In the case of motorcycles and squad cars, “vigilance equivalence indices” were constructed between patrols on foot, on motorcycle, and in squad cars, as well as the vigilance offered by a police station. Thus, the benefits of using motorcycles and squad cars were assumed to be equal to the resource savings in terms of “Carabineros on foot”, given that the objective is to maintain the same level of vigilance as reached with these three alternative methods of police vigilance. The results were spectacular: internal rates of return over 2000 percent per year!

For the inclusion of computers in tasks such as issuing certificates of residence, traffic violations, and various police procedures (public vigilance, guard duty, roll-keeping, court orders, reports and statistics, personnel, documentation and planning and administration), the number of Carabinero-hours saved by using computers was estimated, so that these could now be assigned to vigilance “on the street.” The benefit of this increased vigilance was estimated to be equal to the cost to Carabineros of hiring the corresponding additional (vigilance) personnel.

To eliminate certain tasks charged to Carabineros by Law, a distinction was made between policemen's required attributes and attributions, establishing which tasks may only be carried out by Carabineros and those that could perfectly well be executed by others (for example, the distribution of summonses, which is really
a “messenger” service), either because they did not require the attributes demanded of Carabineros or the attributions that are exclusively theirs. To eliminate police stations, the study group calculated the cost of motorcycle patrols’ which would provide the same level of vigilance as police stations, the benefit being that all the Carabineros in the police station would then be released to provide vigilance “on the street.” To optimize support units, the work group evaluated the costs and benefits of closing the self operated workshops to repair and maintain police vehicles, of eliminating the requirement that bachelors spend the night in police stations, and of outsourcing of food services.

5. The “Diplomado” as the Replacement of the CIAPEP

In the last few years it has been hard to fill the openings in the CIAPEP, which does not contemplate extending an academic (university) degree. Based on a diagnosis that (i) the course was too long, that (ii) many substitute courses had been created in other universities, extending degrees even at the Master’s level, and that (iii) participants wanted to receive a university degree which would help them in obtain salary increases upon their return to the public sector, an agreement was reached with MIDEPLAN to transform the program into one that grants a University Degree, a “Diploma”. The course lasts six and a half months; the Theoretical Phase only covers Social Project Evaluation (10 weeks in length), and the Practical Phase still appraises four projects of interest to the government of Chile, but in 16 weeks rather than 21.

For its first cycle in 2003, the Chilean International Cooperation Agency (AGCI, in Spanish) assigned 12 fellowships for foreign participants, and professionals from Bolivia, Ecuador, Guatemala, Honduras, Nicaragua, and Peru are attending it.