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Plans identify indicators (water, soil and Industry) applicable in Ilam Dam basin water with emphasis on sustainable development

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Abstract

The negligence of development impacts in recent decades has imposed serious problems to great projects due to inattention to the environment. To this end, a positive movement towards the assessment of strategic development effects has been triggered in recent years. This study aims to identify and prioritize executable development projects in the area of drinking water dam of Ilam with the priority of assessing environmental impacts. It is an applied study in terms of objective and a descriptive-analytical study in terms of method. The study population consists of two qualitative and quantitative sections. Experts who are familiar with related issues, problems and impacts of dam making projects constitute the first section while the second one covers specialists who are familiar with the drainage basin of dam. The samples of both sections were selected using purposive sampling method. Data was collected by questionnaire (both open-ended and close-ended questionnaires) and was analyzed using SPSS and Liserl. Finally, 9 important factors were identified as the main title of projects namely: 1) plant product projects, 2) livestock product projects, 3) water, soil and industrial projects, 4) veterinary medicine projects, 5) forest, pasture and watershed management projects, 6) promotion and exploitation projects, 7) economic association projects, 8) production cooperatives for providing agricultural engineering services and 9) job opportunities of agriculture sector. In addition, 82 development-titled projects were extracted to be studied in Ilam dam site.

Keywords: employment, executable projects, Ilam dam, sustainable development.

1. Introduction

If management is defined as the process of solving problem(s) to realize organizational targets in the best way through efficient of rare resources in an ever-changing environment, decision-making can be defined as the method of moving in a special route ending to an ideal target, which is deliberately selected among different available routes [Mehrghan, 2004]. Before 1961, planning and decision-making were easy to practice issues and prioritization was not the case as there were a limited number of executable projects on the one hand and restrictions on credits required for the projects were few on the other hand. Since economic revolution era, i.e. from the beginning of 1940s, huge investments have been made to finance water projects to be implemented because of increased demand for supplying safe drinking water arising from increased population, industry development and promotion and increase of agricultural products. The inherent limitation of Iranian water resources has been an

important challenge of the country's water sector. The average precipitation of Iran is about 240mm on annual basis. This corresponds to one third of global average and half of Asia continent. This implies that Iran is an arid and semi-arid country with northwestern and western regions with the highest precipitation. In a large area of eastern and southeastern regions of Iran, the average precipitation is less than 100mm on annual basis (Abbaspour, 1993). Northern and northwestern regions have the main water resources so that they possess 70% of high- quality water resources while 50% of areas in central, eastern and southeastern regions possess only 30% of water resources.

Considering the importance of rivers, dams and aquatic habitats as the most important aquatic ecosystems, the development of time and site requirements of rivers and aquatic ecosystems is of high importance in the process of developing and exploiting water resource plans in order to estimate demands based on real facts. In the sustainable development of developing countries in 21th century, effective management of water resources, use of non-conventional resources (water recycling) and technology development were proposed as three pillars of sustainable development. Therefore, emphasizing environmental impacts, this study aims to identify and prioritize executable projects in Ialm dam.

2. Literature of study

2.1. Factors threatening Iranian water resources

Considering above discussions, one can argue that Iranian water resources are at risk. To evaluate this, this section briefly assesses the main influential factors of Iranian environment and water resources.

A) Drinking and health consumption

Both population and consumption are variables increasing continually. In recent years, Iran has experienced population growth. The global rate of demand for water is held in Iran for different consumption areas so that 71% of the renewable resources of water are being used in Iran. According to the prediction of 2021 horizon, Iran population will rise to 97.5 million, 81million of whom will be city residents (Management and Planning Organization of Iran, 1999). If Iran population is considered approximately 100 million in 2021, the per capita renewable water resources will be 1300 m^3. According to global standards, this lies inside critical boundary. Therefore, if the demand for drinking water is estimated to be 7.8 billion m^3 in 2021, about 2 billion m^3 high quality water should be supplied as per current standards. This is a great challenge demanding great investments and developing special regulations as to the protection of water resources and monitoring them because of water pollution with different pollutants.

B) Industry and service sectors consumptions

Industry and service sectors have their own special place in both water consumption and water quality. Water consumption in the industry sector accounts for 1 billion m^3 per year, 60-70 percent of which is being discharged to the environment as industrial wastewater. According to the reports of Iran Statistical Center in 2000, the majority of Iranian industries have been centralized in given regions of Iran. This has induced different environmental problems in the regions (Iran Statistical Center, 2003). According to the center, of all

industrial workshops in Iran, 1302 workshops discharge industrial wastewater. Moreover, most workshops either lack modern technologies or wastewater treatment installations or, if have, their outlet wastewater is not refined correctly and does not satisfy standards. According to predictions, the increased water consumption in the industry sector will induce more sophisticated consequences. This, in turn, will require advanced and supplementary refineries. Since the industry of wastewater treatment benefits from economic subsidies, wastewater treatment is not practiced accurately and continuously and this is water, which is generally considered as the main subsidy. Iranian industry sector is weak in technology and its facilities are old. On the other hand, public sector is the owner of the main part of Iranian industry. Therefore, the likelihood of existing polluting industries, especially water polluting industries, is increased and this is another deficiency of this sector.

C) Agriculture sector consumption

The agriculture sector is the main consumer of water so that in 2001 it supplied its demand for water (account for 86% of harvested water resources) form surface waters and 54% from ground waters (environment and sustainable development office of the Ministry of Agriculture Jahad, 2003). On the other hand, chemical fertilizers and pesticides are not used optimally. Therefore, a main part of agricultural wastewater is discharged to water resources through rivers and drainages and this has resulted in contaminated and saline water resources [Nazari et al., 1997]. According to investigations, in the past two decades there was no considerable change in agricultural lands area so that from 1973 to the end of the last investigation, the growth of agricultural area was only 4.5%. On the other hand, agricultural products had a considerable growth thanks to the use of chemical fertilizers, chemical toxins and benefiting from appropriate mechanisms. This has accompanied with many negative consequences including soil and water pollution.

In a paper titled “investigation of environmental impacts in irrigation and drainage networks” Sheibani (2013) concluded that the assessment of environmental impacts is a very effective technique for evaluating the effects of different sectors or activities on the components of the environment through understanding the environment and its importance. This helps planners to well know the status of natural environment of the studied region. Therefore, in addition to dam, itself, such considerations should be taken into account in the development projects [Sheibani, 2013, p 6].

In a paper titled “economic growth, human development and water pollution arising from the economic activities of the selected countries of the world”, Dizaji and Gholaminezahd Dizgah (2011) concluded that economic growth accelerates the environment depletion. Therefore, economic growth and human development foster the environment depletion and pollution [Dizaji and Gholaminezhad, 2011, p17]. Ahmadi and Hajinezhad (2010), concluded in their paper titled “environment destruction: a hurdle in the way of sustainable development” that a country will not achieve sustainable development if it does not take environmental considerations into account. They argued that environmental assessments should be practiced in the execution of all projects [Ahmadi and Hajinezhad, 2010, p129].

In a paper titled “the economic analysis of the effects of demand management policies on water resource development plans” Karamouz, Eliasi and Ahmadinia (2008), concluded that environmental assessments should be always taken into account as an essential component of

such plans [Karamouz et al, 2008, p. 156]. In November 1986, all aquatic animals from Ball in Switzerland to Netherlands coasts were died due to the discharge of mercury-contained substances.

The sinking or grounding of huge oceangoing oil vessels has imposed serious damages to sea life in recent years. In 1983, about 120 million liters pollutants were discharged in the U.S. waters due to 11000 contaminating accidents. The Global Bank "The world development indices" report on water pollution was published for two issues: a) the emission of organic water pollutants and b) the contribution of the industry sector to water pollution. The report emphasizes that in 1990, the emission of organic pollutants in Iranian water was 0.16 kg per day per labor and this value remained the same by 2003. Surprisingly, the emission of water pollutants decreased from 1990 to 2003 in many countries including China, the U.S., Russia, India, Japan, Germany and Brazil. According to the Global Bank, in 2003 food and beverage industry-induced pollutions accounted for the main part of contamination in all countries with Moldavia with the highest registered pollution so that Moldavian food and beverage industry was responsible for 98% of water pollution.

2.2. Method of study

This is a combined qualitative-quantitative study where encoding and descriptive-correlation techniques were applied in the qualitative and quantitative parts, respectively. It is an applied study in terms of objective. Considering the study nature, it has two types of population. The population of the qualitative part consists of experts and specialists who are familiar with water resources as well as agricultural, livestock and the industrial resources of the studied province. In the quantitative part, the population consists of 82 specialists who are specialized in the studied area (see below table). A total number of 8 experts were selected as the qualitative part population based on their proficiency in the qualitative and quantitative protection of the province water resources (members of water resource protection committee). In the quantitative part, purposive sampling technique was used and 82 experts were selected considering the limited number of experts in the studied area. In the quantitative part, the identified factors were approved using structural equations and Liserl. SPSS was used to rank the identified projects constituted by 9 main factors and 82 assessable projects. First, executable development projects in the drainage basin of Ilam dam were identified through interview. Then, the identified factors formed a conceptual model using encoding technique. In addition, the questionnaire of the quantitative part was developed using extracted joint codes and based on Likert 5-point scale. The content validity was approved using the opinions of specialists, adviser professor and consultant and others. Cronbach's alpha was derived to be 0.90

2.3. Objectives

A) General objective

Identification and prioritization of executable projects in the area of Ilam drinking water dam emphasizing environmental impacts

B) Subsidiary objectives

1) Identification of executable agricultural projects in the area of Ilam drinking water dam emphasizing environmental impacts
2) Identification of executable livestock and plant product projects in the area of Ilam drinking water dam emphasizing environmental impacts
3) Identification of executable industrial projects in the area of Ilam drinking water dam emphasizing environmental impacts
4) Identification of executable forestry, posture and watershed management projects in the area of Ilam drinking water dam emphasizing environmental impacts
5) Identification of executable economic association projects in the area of Ilam drinking water dam emphasizing environmental impacts and
6) Prioritizing the above mentioned projects emphasizing environmental impacts.

3. Data analysis

Table 1: Propositions derived from interview (encoding)

code	Interview no.	Executable project
100	1	Construction and development of aquatic and dry land gardens
101	1	Modification, replacement and renovation of gardens
102	2	Production of certified seedling
103	2	Construction of flower, vegetable and summer crops greenhouses
104	3	improving, renovating and equipping greenhouses
105	3	Production and collection of medicinal herbs and planting medicinal plants
106	5	constructing, equipping and developing mechanized agricultural units
107	7	Development of rice seedling bank and production of rice hybrid seed
108	7	Development of summer crops and rice seedling bank-production of vegetable and summer crops hybrid seeds
109	8	Construction of honey bee queen breeding units
110	8	Construction of silkworm breeding units-construction of mobile centers for milk collection
111	1	Construction of complementary industries subsidiary to plant production units including packing, preservation and freezing different kinds of cereals, vegetables, citrus fruits, agricultural products, different fruit juices and cold storage facilities.
112	1	Tannery and hide projects
113	1	Beverage, non-natural (essence) fruit juice industries
114	1	Wooden products industries
115	1	Gas station
116	2	Bitumen and asphalt industry
117	2	Metal melting industry
118	2	Confectionary and cookie industries
119	2	Industrial poultry and livestock slaughterhouses
120	3	Meat packing and meat products
121	3	Production of compost out of municipal wastes
122	3	Production of compost out of livestock dung
123	3	Refining industrial oils
124	3	Producing and refining edible oils
125	4	Production of brick and ready-mix concrete products

code	Interview no.	Executable project
126	4	Production of building packed plaster and lime
127	5	Production of plastic and rubber-made products
128	5	Human medicine industry
129	6	Livestock and aquatic animals medicine industry
130	6	Vehicle part industries
131	7	Vehicle rubber part industries
132	8	Paint and chemical substance industries
133	8	Construction of complementary and processing industries subsidiary to livestock products, cold storage facility, processing and packing different red meat, white meat and dairy products
134	1	Construction of processing industries subsidiary to fishery industry including freezing, processing and packing different fishes, shrimps and can products
135	1	Cattle breeding project (less than 25 cattle)
136	1	Cattle breeding project (more than 25 cattle)
137	1	Egg-laying chicken breeding project (1000 chickens and more)
138	1	Warm and cold water fish-breeding project
139	2	Industrial Cattle breeding (100 cattle)
140	2	Industrial Cattle breeding (200 cattle)
141	2	constructing and operating technical consultation and agricultural engineering companies
142	2	Construction of mechanized service provider companies as well as different clinics for phytopathology, veterinary, soil and water and plant protection
143	2	Cooperatives for breeding the seedlings of non-fruitful tress (construction of plant nursery)
144	3	Machine-made brick project
145	3	Development of industrial and medicinal plants
146	3	Production of forest and posture seedlings
147	4	Cooperatives for production of vegetables and summer crops
148	4	Cooperatives for production of natural and decorative flowers
149	5	Execution of forestry projects
150	5	Execution of Watershed operations in exempt lands
151	6	Designing and developing fruit gardens and greenhouse products-construction of plant nursery
152	6	Providing mechanized services (executing planting, growing and harvesting operations)
153	6	Home-scaled agricultural small projects
154	6	Small-scaled agricultural processing industries
155	7	Employment of rural women
156	7	Cooperatives for procurement and distribution of agricultural inputs and machineries
157	8	Cooperatives for procurement and distribution of plants, flowers and seedlings
158	8	Cooperatives for providing mechanized services to farmers
159	8	Cooperative for production of cereals (wheat and barley)
160	8	Cooperatives for production of fruitful and non-fruitful trees
161	1	Cooperatives for production of greenhouse summer crops (constructing greenhouse and producing greenhouse products)
162	1	Cooperatives for production and distribution of agricultural services institutes
163	2	Cooperatives for industries associated with agricultural products
164	2	Cooperative of small markets for direct supply of machineries
165	2	Cooperatives for producing and breeding silkworm

code	Interview no.	Executable project
166	3	Cooperatives for honey production (beekeepers cooperatives)
167	3	Cooperatives for milk collection centers
168	4	Cooperatives for production of forestry and posture subsidiary products (tragacanth and pistacia)
169	4	Fighting plant diseases and pests
170	5	Maintenance of agricultural machineries and tools (training and maintenance)
171	6	Studying, designing and executing pressurized irrigation systems
172	6	Establishing pedology and hydrology laboratories
173	6	Establishing laboratories for evaluating plant diseases and pests
174	7	Producing and distributing modified seedling seeds required for the studied region
175	7	Supplying and selling agricultural machineries, tools and inputs
176	7	Establishing contractual companies for providing engineering services in the field of technical and infrastructure issues
177	8	Production of fodder (planting and growing fodder plants)
178	8	Construction of seed hubs and production of agricultural seeds
179	8	Industrial milk industries
180	8	Production of livestock food and seed sifting stations (stationary and mobile stations)
181	8	Fodder production

The above table encodes the propositions derived from specialists' interview

Table 2: Allocating joint codes to executable projects

Executable p[projects	Joint code	Executable projects	Joint code
100-101-102-103-104-105-106-107-108	Plant product projects	109-110-111	Livestock product projects
112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132	Water, soil and industries	133-134-135-136-137-138-139-140	Veterinary medicine
141-142-143-149-150-151-152-153-154-155	Forest, posture and watershed management	144-145-146-147-148	Promotion and exploitation
156-157-158-159-160-161-162-163-164-165-166-167-168	Economic associations	169-170-171-172-173-174-175-176	Cooperatives for agricultural engineering services
177-178-179-180-181		Small job opportunities in agriculture sector	

Table 2 shows joint codes of executable projects.

Regarding plant product projects, 9 proposals were identified. Mean and confirmatory factor analysis were used to assess their importance, executability and priority.

Table 3: statistical analysis results

class	Identified projects	mean	Factor load	Sig. level	result	priority
Plant products affairs	Construction and development of aquatic and dry land gardens	3.29	0.83	9.01	executable	4
	Modification, replacement and renovation of gardens	3.52	0.88	9.95	executable	1
	Production of certified seedling	3.28	0.86	9.52	executable	5
	Construction of flower, vegetable and summer crop greenhouses	3.12	0.79	8.35	executable	7
	Optimizing, renovating and equipping greenhouses	3.34	0.81	8.66	executable	3
	Production and collection of medicinal plants and planting medicinal herbs	3.48	0.78	8.20	executable	2
	Constructing, equipping and developing mechanized agricultural units	3.18	0.76	7.99	executable	6
	Development of rice seedling banks and production of rice hybrid seed	3.03	0.71	7.19	executable	9
	Development of summer crop seedling banks and production of hybrid seeds of vegetables and summer crops	3.11	0.73	7.56	executable	8

Table 4: Statistical analysis results

class	Identified projects	mean	Factor load	Sig. level	result	priority
livestock products affairs	Construction of honey bee queen breeding units	3.24	0.59	9.75	executable	3
	Construction of silkworm production units, construction of mobile centers for milk collection	3.90	0.95	15.49	executable	1
	Construction of complementary and processing units subsidiary to plant products including packing, preservation and freezing different cereals, vegetables, citrus, agricultural products, different fruit juices and cold storage facilities	3.40	0.73	11.92	executable	2

Table 5: Statistical analysis results

Class	Identified projects	mean	Factor load	Sig. level	result	priority
Water, soil and industries	Tannery and hide projects	1.58	0.41	1.58	Non-executable	
	Beverage and non-natural (essence) fruit juice industries	1.86	0.30	1.23	Non-executable	
	Wooden product industries	3.22	0.83	9.21	executable	2
	Gas station	2.25	0.43	1.64	Non-executable	
	Bitumen and asphalt industry	1.78	0.35	1.21	Non-executable	
	Metal melting	1.81	0.32	1.58	Non-executable	
	Confectionary and cookie industry	3.38	0.88	9.96	executable	1
	Livestock and poultry industrial slaughterhouse	1.53	0.41	1.56	Non-executable	
	Meat packing and meat products	2.32	0.36	1.38	Non-executable	
	Making compost out of municipally wastes	1.84	0.24	1.01	Non-executable	
	Making compost out of livestock dung	2.01	0.38	1.32	Non-executable	
	Industrial oil refining project	2.01	0.40	1.55	Non-executable	
	Edible oil refining project	2.15	0.42	1.69	Non-executable	
	Brick and ready-mix concrete production project	3.08	0.77	8.16	executable	3
	Building packed plaster and lime products	2.20	0.44	1.64	Non-executable	
	Production of plastic and rubber parts	2.00	0.40	1.57	Non-executable	
	Human medicine industry	2.24	0.19	1.09	Non-executable	
	Livestock and aquatic animals medicine industry	2.19	0.25	1.14	Non-executable	
	Production of vehicle parts	2.15	0.37	1.28	Non-executable	
	Production of vehicle plastic parts	1.81	0.28	1.32	Non-executable	
	Production of paint and chemical substances	1.56	0.36	1.39	Non-executable	

Table 6: Statistical analysis

Class	Identified projects	mean	Factor load	Sig. level	result	priority
Veterinary medicine	Construction of complementary and processing units subsidiary to livestock products, cold storage facilities, processing and packing different kinds of red meat, white meat and dairy products	3.69	0.96	10.64	executable	1
	Construction of complementary and processing units subsidiary to fishery products, including processing, freezing, producing and cold storage facilities, processing and packing different kinds of fishes, shrimps and can products	3.48	0.93	10.41	executable	2
	Cattle breeding project (less than 25 cattle)	3.22	0.44	1.77	Non-executable	
	Cattle breeding project (more than 25 cattle)	2.25	0.42	1.92	Non-executable	
	Egg-laying chicken breeding (10000 parts and more)	1.78	0.34	1.31	Non-executable	
	Cold water and warm water fish breeding	3.26	0.61	8.33	executable	3
	Industrial cattle breeding (200 cattle)	3.38	0.47	1.94	Non-executable	
	Industrial cattle breeding (200 cattle)	1.53	0.39	1.65	Non-executable	

Table 7: Statistical analysis

Class	Identified projects	mean	Factor load	Sig. level	result	priority
Forest, posture and watershed management	Establishing and operating consulting companies for providing technical and agricultural engineering services	3.49	0.79	11.15	executable	5
	Establishing companies for providing mechanized services and establishing different phytopathology, veterinary, soil and water and plant protection clinics	3.01	0.59	9.23	executable	10
	Cooperatives for producing the seedling of fruitful and non-fruitful trees (plant nursery)	3.57	0.71	11.42	executable	4
	Executing forestry projects	4.03	0.94	12.34	executable	1
	Executing watershed management operations in exempt lands	3.68	0.87	11.67	executable	3
	Designing and developing fruit gardens and greenhouse products and constructing plant nursery	3.03	0.65	9.76	executable	9
	Providing mechanized services (performing planting, growing and harvesting processes)	3.27	0.73	10.12	executable	8
	Home-scaled small agricultural projects	3.42	0.77	10.57	executable	6
	Small agricultural processing projects	3.38	0.74	10.43	executable	7
	Employment of rural women	3.78	0.89	12.27	executable	2

Table 8: Statistical analysis

class	Identified projects	mean	Factor load	Sig. level	result	priority
Promotion and exploitation	Cooperatives for producing the seedling of non-fruitful trees (plant nursery)	3.00	0.56	8.54	executable	5
	Production of machine-made brick	3.73	0.92	12.24	executable	2
	Development of medicinal and industrial plants	3.75	0.93	12.42	executable	1
	Production of forest and posture seedlings	3.28	0.68	9.84	executable	4
	Cooperatives for production of vegetables and summer crops	3.35	0.70	9.98	executable	3

Table 9: Statistical analysis results

class	Identified project	mean	Factor load	Sig. level	result	priority
Economic Associations	Cooperatives for procurement and distribution of agricultural inputs and machineries	3.09	0.70	9.92	executable	10
	Cooperative for procurement and distribution of different seedlings, flowers and plants	3.33	0.83	10.72	executable	5
	Cooperatives for providing mechanized services to farmers	3.54	0.86	11.21	executable	3
	Cooperatives for production of cereals (wheat and barley)	3.30	080	10.33	executable	6
	Cooperatives for production of fruitful and non-fruitful trees	3.63	0.89	11.38	executable	2
	Cooperatives for production of greenhouse summer crops (construction and of greenhouse and production of greenhouse products)	3.21	0.79	10.63	executable	7
	Cooperatives for procurement and distribution of agricultural inputs	3.00	0.55	9.77	executable	12
	Cooperatives for industries associated with agricultural products	3.20	0.77	10.57	executable	8
	Cooperatives of small markets for direct supply of machineries	2.68	0.31	1.69	Non-executable	13
	Cooperatives for producing and breeding silkworm	3.17	0.73	10.37	executable	9
	Cooperatives for production of honey (beekeeper cooperatives)	3.74	0.89	11.88	executable	1
	Cooperatives for milk collection	3.04	0.63	9.83	executable	11
	Cooperatives for production of subsidiary products of posture and forestry (tragacanth and pistacia)	3.53	0.85	10.94	executable	4

Table 10: Statistical analysis results

class	Identified project	mean	Factor load	Sig. level	result	priority
Production cooperatives	Fighting plant diseases and pests	2.36	0.21	1.06	Non-executable	8
	Maintenance of agricultural tools and machineries (training and maintenance)	3.03	0.77	9.62	executable	7
	Studying, designing and executing pressurized irrigation systems	3.69	0.73	11.45	executable	1
	Establishing pedology and hydrology laboratories	3.63	0.85	10.87	executable	2
	Establishing laboratories for investigating plant diseases and pests	3.10	0.82	9.98	executable	6
	Production and distribution of modified seedling seeds required for the studied region	3.35	0.80	10.63	executable	4
	Procurement and selling agricultural inputs, tools and machineries	3.40	0.83	10.75	executable	3
	Establishing contractual companies for providing engineering services in the field of technical and infrastructure issues	3.25	0.60	10.47	executable	5

Table 11: Statistical analysis results

class	Identified project	mean	Factor load	Sig. level	result	priority
Small opportunities	Fodder production (planting and producing fodder plants)	3.32	0.94	13.06	executable	1
	construction of seed bank, production of agricultural seeds	3.30	0.96	13.15	executable	2
	Industrial milk industries	2.34	0.46	1.45	Non-executable	
	Production of livestock and poultry food and seed sifting stations (stationary and mobile stations)	3.01	0.63	9.35	executable	3
	Fodder production	2.86	0.6	9.15	executable	

4. Conclusion

The following table concludes the final analysis results with respect to considered classifications.

Table 12: results

classification	Number of proposals	Executable	Non-executable
Plant products	9	9	-

Livestock products	3	3	-
Water, soil and industries	21	3	18
Veterinary medicine	8	3	5
Forest, posture and watershed management	10	10	-
Promotion and exploitation	5	5	-
Economic associations	13	13	-
Production cooperatives	8	7	1
Job opportunities	5	4	1

According to above classifications, plant product and livestock product projects are executable in 9 and 3 classes, respectively. Regarding water, soil and industry projects, of 21 studied classes only 3 projects were recognized as executable projects (wooden product industries, confectionary and cookie industry and brick and ready-mix concrete industry). In veterinary medicine field, of 10 studied classes 3 classes were executable as follows: construction of complementary and processing industries subsidiary to livestock products, cold storage facility, processing and packing red and white meats and dairy products; construction of complementary and processing industries subsidiary to fishery including processing, freezing, producing and packing different fishes, shrimps and can products and breeding cold water fishes with more than 93% factor load and and warm water fishes with more than 60% factor load; indicating that necessary measures should be taken into account during the execution of the projects. All 10 classes of forest, posture and watershed management projects were recognized executable. The same is valid in the promotion and exploitation projects and economic association projects consisting of 5 and 13 classes, respectively. Regarding production cooperatives, of 8 proposed projects only the project of fighting plant diseases and pests was recognized as non-executable project with a low factor load. In job-opportunities filed, of 5 proposed projects only industrial milk industries was recognized as non-executable project.

5. Study limitations

The researcher faced several limitations in this study; some roots in the nature of scientific studies in human field, which are inevitable. Limited resources and limited studies on the identification of development projects in Iran and the world dams in terms of their contribution to human field contamination were other limitations of this study.

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