



Ziarat

Integrated District Development Vision



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Acronyms

BEMIS	Balochistan Education Management Information System
BEPA	Balochistan Environment Protection Agency
BHMIS	Balochistan Health Management Information System
BISP	Benazir Income Support Programme
BLGO	Balochistan Local Government Ordinance
CCB	Citizen Community Board
CNG	Compressed Natural Gas
CNIC	Computerised National Identity Card
CSOs	Civil Society Organisations
EOBI	Employees Old-Age Benefits Institution
EPI	Expanded Programme on Immunization
FAO	Food and Agriculture Organisation
GIS	Geographic Information System
GoB	Government of Balochistan
GoP	Government of Pakistan
IDDV	Integrated District Development Vision
IUCN	International Union for the Conservation of Nature
LHW/V	Lady Health Workers/Visitors
LPG	Liquified Petroleum Gas
M&E	Monitoring and Evaluation
MAP	Medicinal and Aromatic Plants
MICS	Multiple Indicators Cluster Survey
NGOs	Non Government Organisations
NIPS	National Institute of Population Studies
O&M	Operation and Maintenance
PHED	Public Health Engineering Department
PSDP	Public Sector Development Programme
SMEs	Small and Medium Enterprises
UNDP	United Nations Development Programme
UNICEF	United Nations Children Fund
WB	World Bank
WHO	World Health Organization
WLL	Wireless Local Loop
WWF	World Wildlife Fund

Executive summary

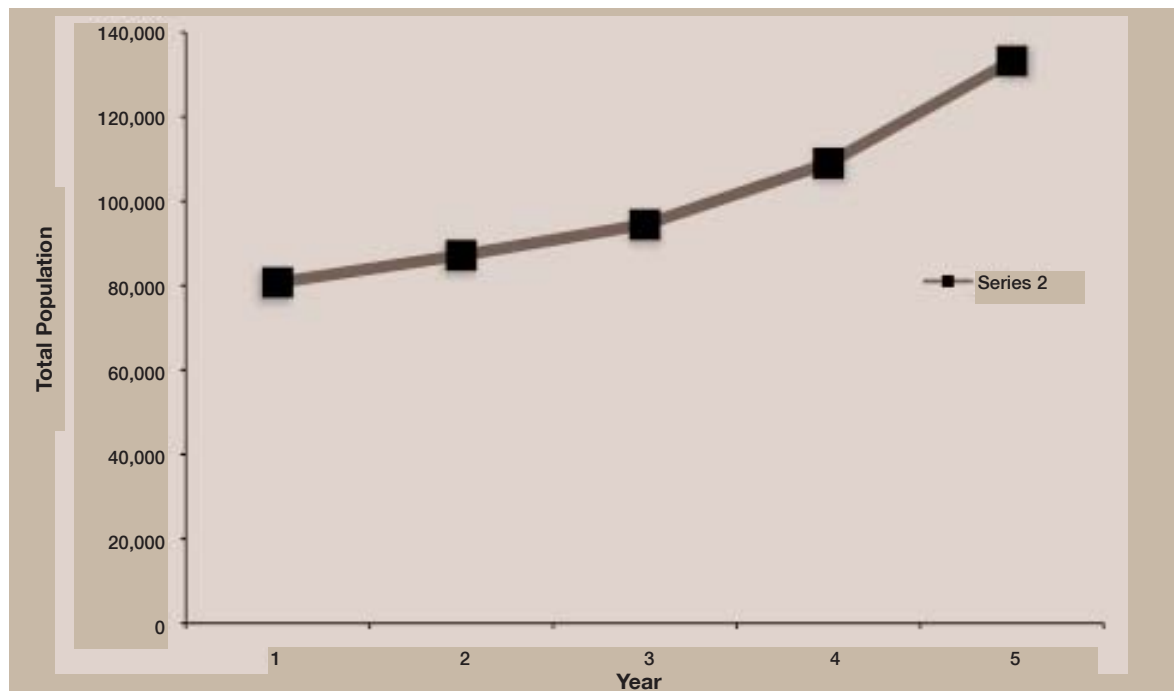
Ziarat district's Integrated District Development Vision (IDDV) presents a statement of the districts development vision and in the absence of other strategic plans it may be read as a policy statement on part of the district. A development vision expresses a desirable future condition envisaged by a nation, region or administrative unit, and charts a course of action for its attainment. It is a statement of commitment that expresses concerns and values of local communities regarding their priorities and resource allocation decisions.

Five principles have guided the IDDV formulation process:

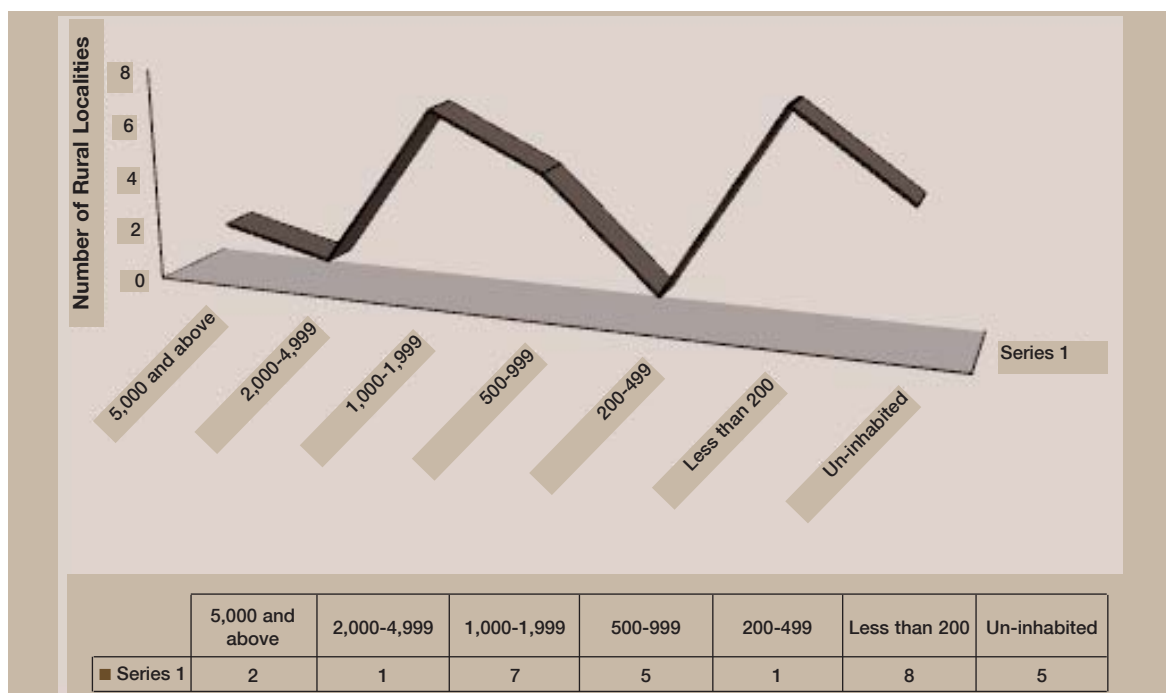
- Consultation with citizens and stakeholders;
- Consensus building;
- Long term sustainability;
- Integrated planning and management; and
- Equity (gender and income).

Ziarat's IDDV has gained legitimacy as consultations were the bedrock of its formulation process. These have provided a way to capture local and collective thinking, transform a spirit of collective responsibility into action and ensure ownership of priorities and choices.

Figure 1: Population growth trends with projections for Ziarat district



Source: NIPS, 2010

Figure 2: Number of rural localities by population size in Ziarat district

Source: District Census Report, 1998

The IDDV formulation process was launched in March 2009. It spanned two very different legal dispensations at the district level – in 2008 the Balochistan Local Government Ordinance 2001 was still effective and currently a new local government ordinance is awaited. Regardless of the governance system, district level visions and plans help to provide focus and continuity to work at the district and provincial levels. They ensure the following good practices:

- Consensus in planning, target setting and fund allocation;
- Participation, particularly of women in decision making;
- Equity and where necessary positive discrimination for the poor and vulnerable;
- Responsiveness to citizens and clients/customers;
- Effectiveness and efficiency in service delivery;
- Social accountability and transparency of information; and
- Enforcement of laws.

The district's area is 3,670 km² (Ziarat tehsil 1,489 km² and Sanjawi 2,181 km²) and it's

population is over 80,748 (NB: As part of the population boycotted the 1998 Census on the appeal of a political party the actual figures is estimated to be more).

The average annual growth rate of the population for the period 1998-2011 is estimated at about 2.7 per cent; this is significantly higher than the average annual growth rate between 1981-1998 which was of 0.21 per cent.

Ziarat Town, with a MC, is the only officially recognised urban locality in the district and is approximately 133 km north-east of Quetta city. The major villages in Ziarat tehsil are Ziarat, Kawas, Zandra, Ahmadoon, Gogi, Kachh, Kan, Tungi, Spezandi, War Choom and Zargi. Sanjawi village, the headquarters of the tehsil is located further east at approximately 63 km from Ziarat Town, 196 km from Quetta city, and 32 km from Loralai Town. Major villages in Sanjawi tehsil are: Sanjawi village, Tand Wani, Kazha, Shireen, Uchwani, Poi, Viallah Aghbarg, Kharashang, Shenlez, Chalez Khalil, Chalez Mir Haji, Regorah and Wajloon.

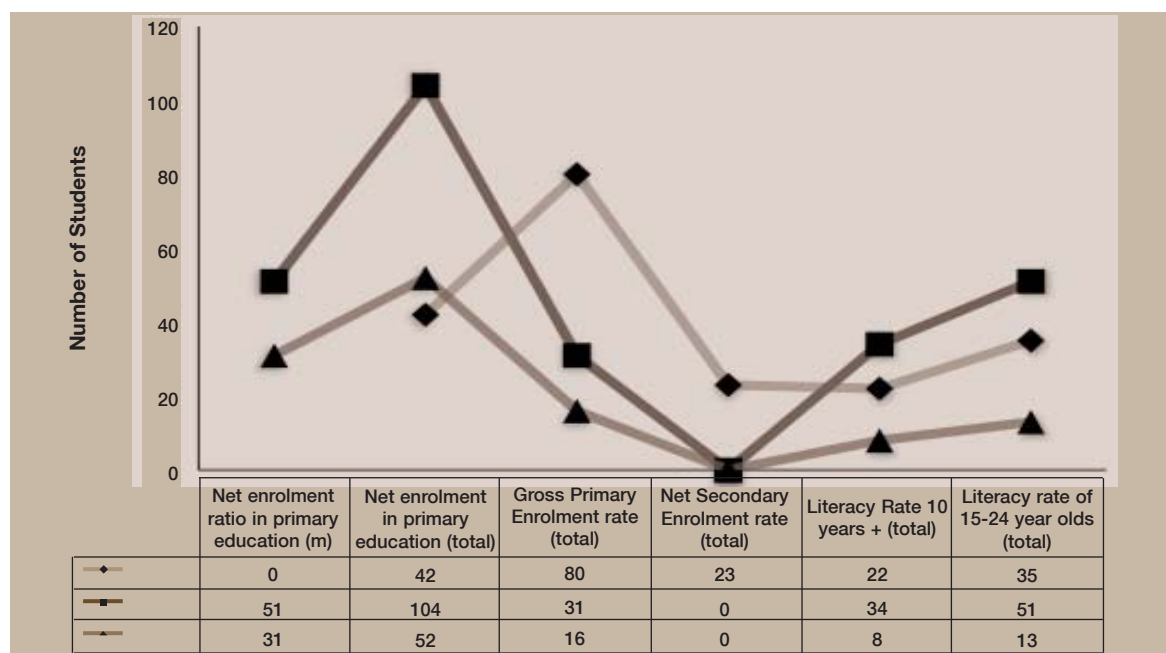
According to the District Census Report (1998), there were 4,503 housing units in Ziarat tehsil, 4,076 in the rural part of the district (92.52 per cent). More than 19 per cent of the housing units in Ziarat tehsil have single rooms (Ziarat Town 31.03 and rural areas 18.78 per cent); and 2-4 rooms (62.93 in Ziarat Town and 60.80 per cent in rural areas).

The vulnerability of the housing units made of unbaked bricks and mud bonding in the event of an earthquake is very high as was seen during the “Earthquake of October 29”, 2008. However, rescue operations for such houses as opposed to houses with concrete roofs were easier. Juniper is often extracted illegally for use as timber in the construction of houses (beams, planks, doors, windows etc.).

Out of approximately 34 per cent people who were able to access education, 27.29 per cent achieved primary level education, 18.48 middle level, 17.55 matriculation level, 4.47 intermediate level; there were 2.68 graduates and 1.28 postgraduates in the district.

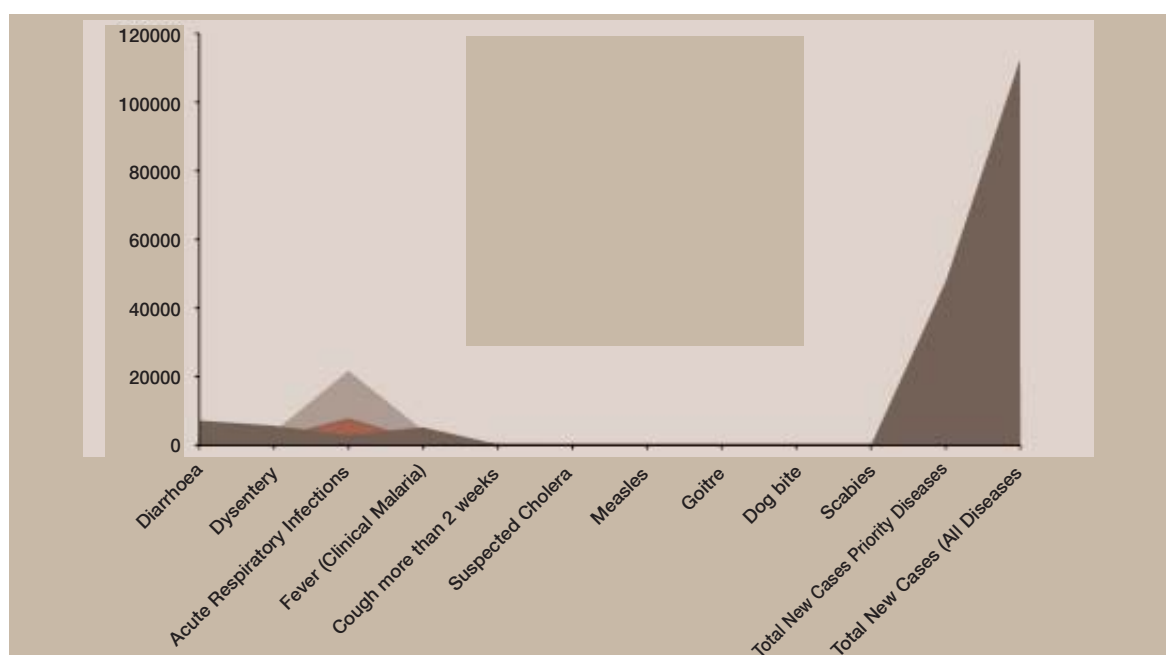
According to the 2007-08 statistics provided by BEMIS, there were 417 boys schools, 140 girls

Figure 3: Education indicators by gender in Ziarat district

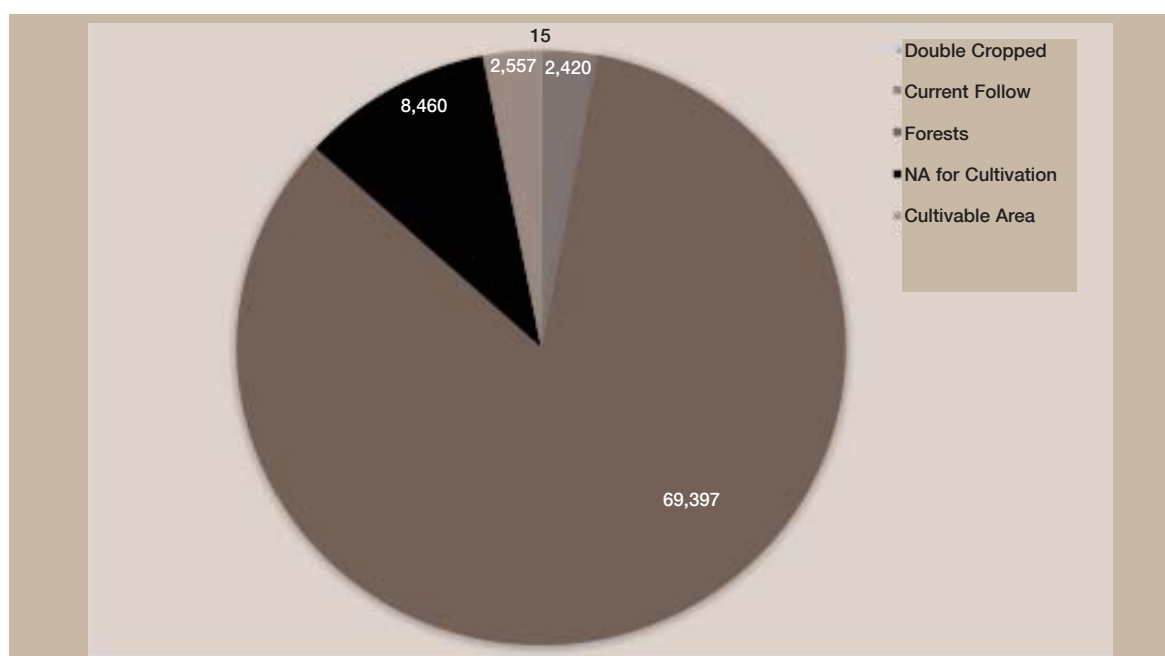


Source: MICS, 2004

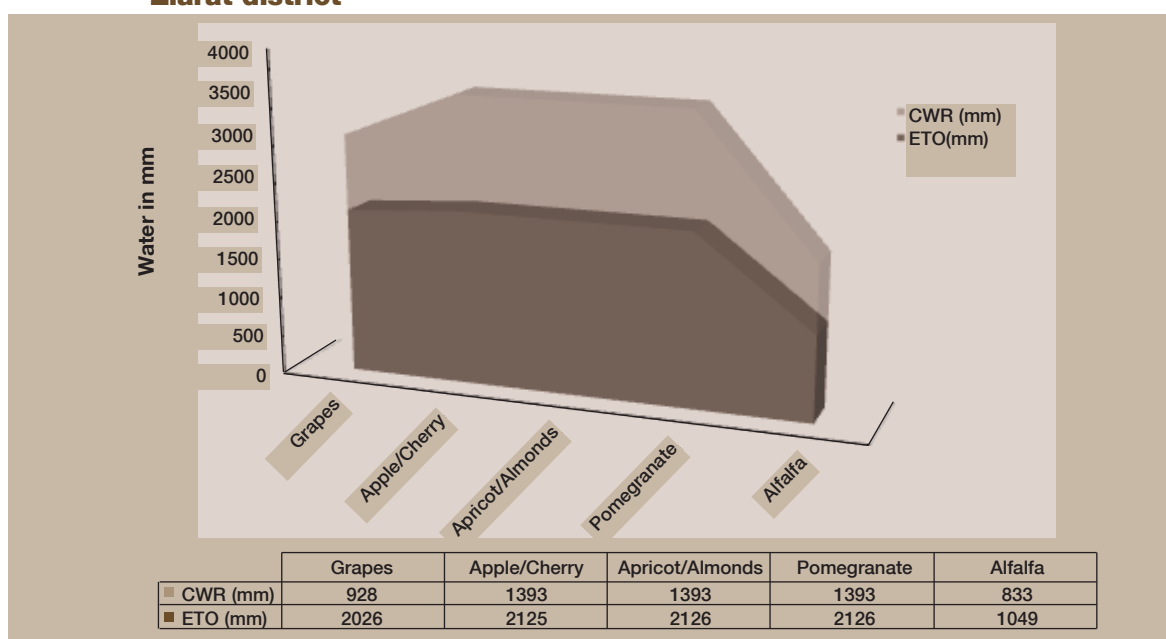
Figure 4: Priority diseases in Ziarat district (2008)



Source: BHMIS, 2008

Figure 5: Cultivated and uncultivated in Ziarat district

Source: Development Statistics of Balochistan, 2007-08; Forest Department 2010; Survey of Pakistan Map, 2004

Figure 6: Water requirements of major crops (CWR) in Zone V (including for Ziarat district)

Source: Water Requirements of Major Crops for Different Agro-Climatic, 2006

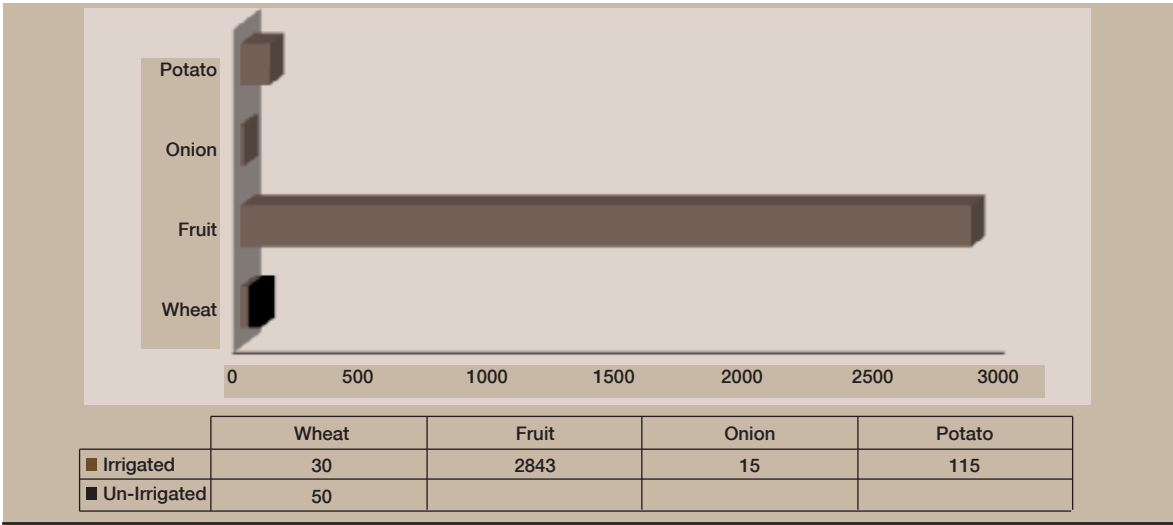
schools, one male and one female degree college in the district.

According to the MICS-2004:

- 27.4 per cent of women received ante-natal care from a *dai*. 53.4 per cent consulted no one for post natal care.

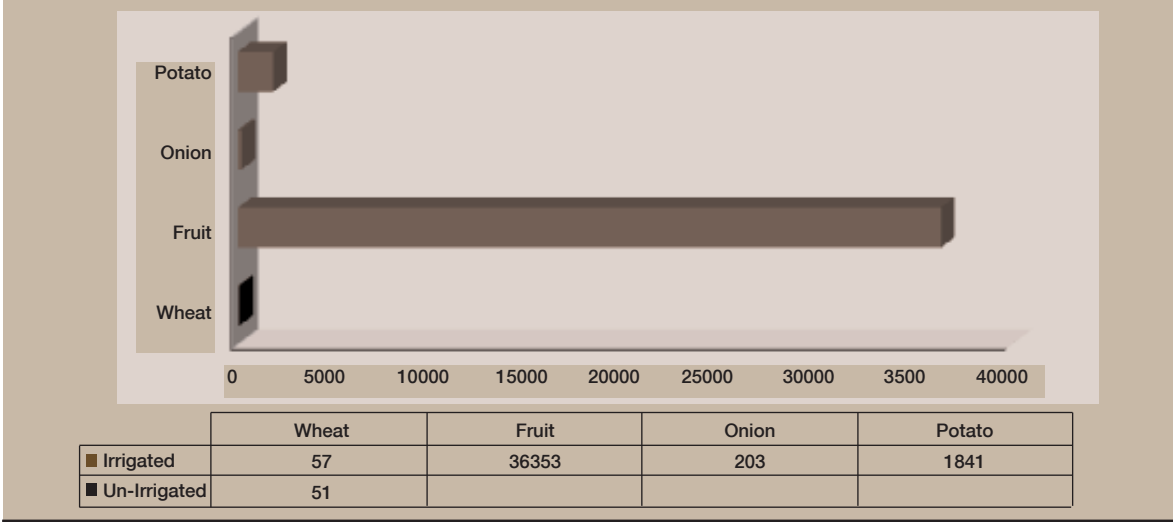
- One per cent of married women had heard of HIV/AIDS;
- Three per cent of non pregnant married women and their husbands were using modern methods of contraception while 15 per cent used other methods. 29 per cent married

Figure 7a: Area (hectares) of crops – irrigated and non irrigated in Ziarat district



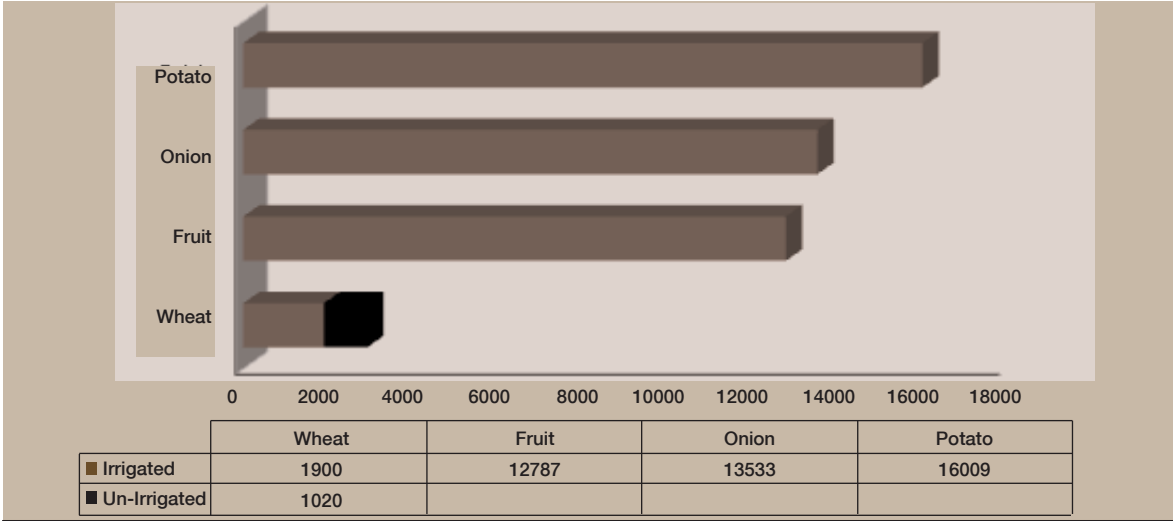
Source: Agriculture Statistics of Balochistan, 2005-06 and 2007-08

Figure 7b: Production of crops (tonnes) – irrigated and non irrigated in Ziarat district

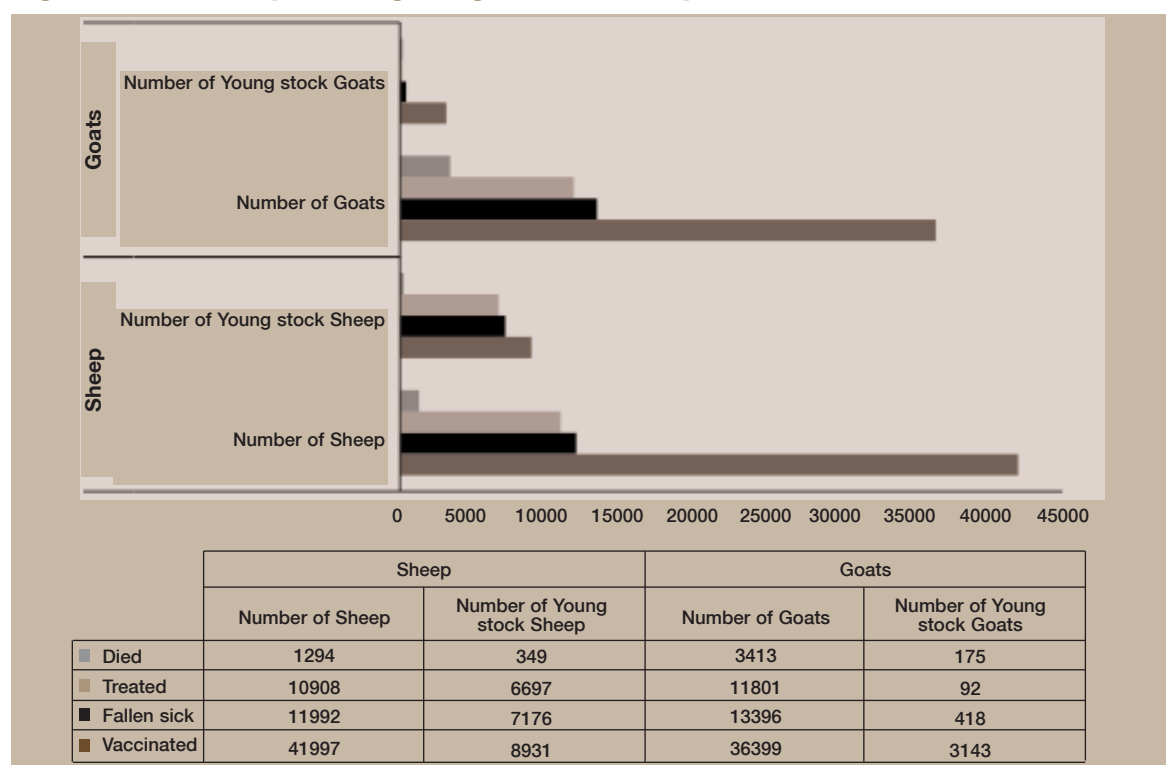


Source: Agriculture Statistics of Balochistan, 2005-06 and 2007-08

Figure 7c: Yield (kg/ha) of crops – irrigated and non irrigated in Ziarat district



Source: Agriculture Statistics of Balochistan, 2005-06 and 2007-08

Figure 8: Veterinary coverage of goats and sheep in Ziarat district

Source: Balochistan Livestock Census, 2006

women knew how to avoid pregnancies while 13 per cent had ever used any method to avoid pregnancy. 67 per cent of children under 5 years of age are under weight and only 10 per cent of the population was covered by LHWs.

- 1.7 per cent children were reported to have had an incidence of diarrhoea in the past year. In the survey 'in the past two weeks' 11 per cent had been admitted to an hospital, 57 per cent consulted a government facility, 68 per cent used ORS/ORT, 22 per cent high fever, 16 per cent cough with difficulty breathing and 17 per cent with diarrhoea.
- Level of user knowledge of iodised salt was 15 per cent while 2 per cent used iodised salt.
- 21 per cent children were fully immunised (12-23 months), 33 per cent partially and 46 per cent were not immunised at all. 46 per cent children under 5 years of age had BCG scars.

The most common diseases in the district are respiratory diseases, anaemia, skin infections, renal diseases, worm infections, diarrhoea, dysentery, malaria and hepatitis. 8,460 blood slides were examined, 713 malarial cases were found and all of

them were treated during 2007, in addition to others with obvious symptoms.

According to the Health Directorate of Quetta, in 2006-07 there were 14 BHUs, eight dispensaries, one 20-bed DHQ Hospital (the medical superintendent is in charge of district headquarters hospital) one MCH Centre, one Mobile Dispensary, three RHCs of 40 beds each and one T.B Clinic in Ziarat district. The health staff in Ziarat district in 2006-07 consisted of 29 doctors (23 males, six females), three nurses (two females, one male) 16 LHV and 30 *dais*/ midwives and 321 trained Traditional Birth Attendants.

According to the MICS-2004:

- 26 per cent households had an improved drinking water source and 22 per cent had access in the house; 25 per cent had access within one kilometer (or half an hour return travel time); and 26 per cent had access within two kilometer (or half an hour travel time).
- Seven per cent households had adequate sanitation; and two per cent households had proper disposal of waste water.
- One per cent had adequate disposal of sold waste.

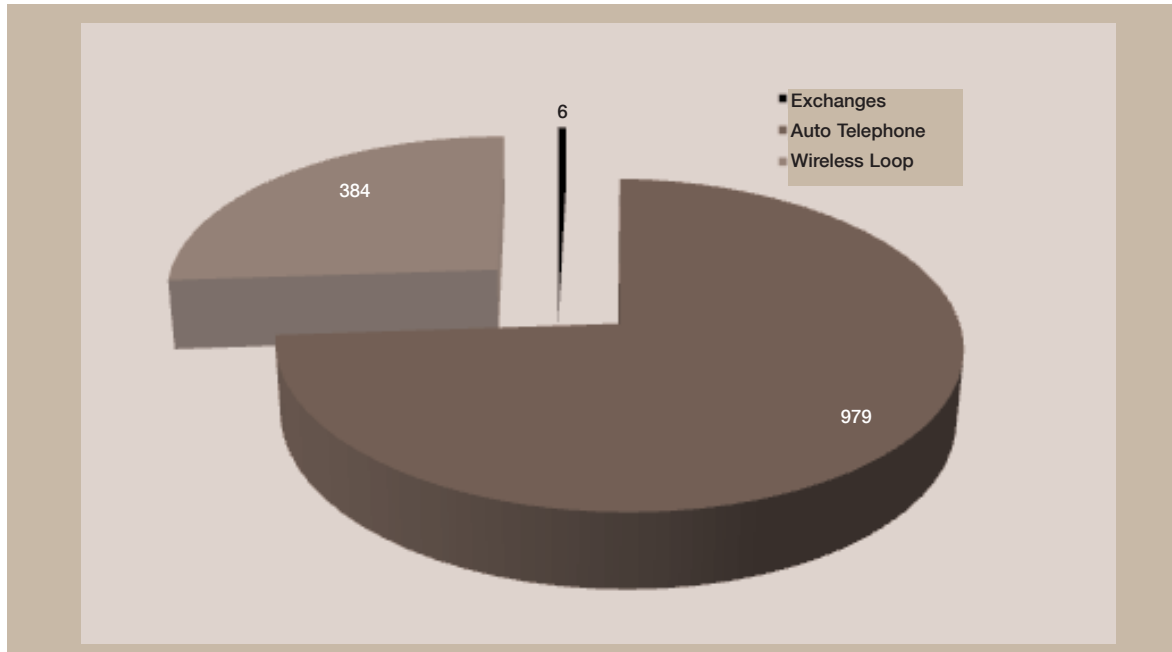
- 94 per cent households reported washing hands before eating and zero per cent reported washing hands after 'going to the latrine'.

Regarding availability and use of sanitary means of excreta disposal; 93 per cent households used open places, 0.2 per cent households were connected to a public sewer; 0.8 per cent households were connected to a septic system; 4.5

per cent households had a pour flush toilet; 1.4 per cent households had traditional pit latrines (closed); and 2.3 per cent households gave no response or their response was missing.

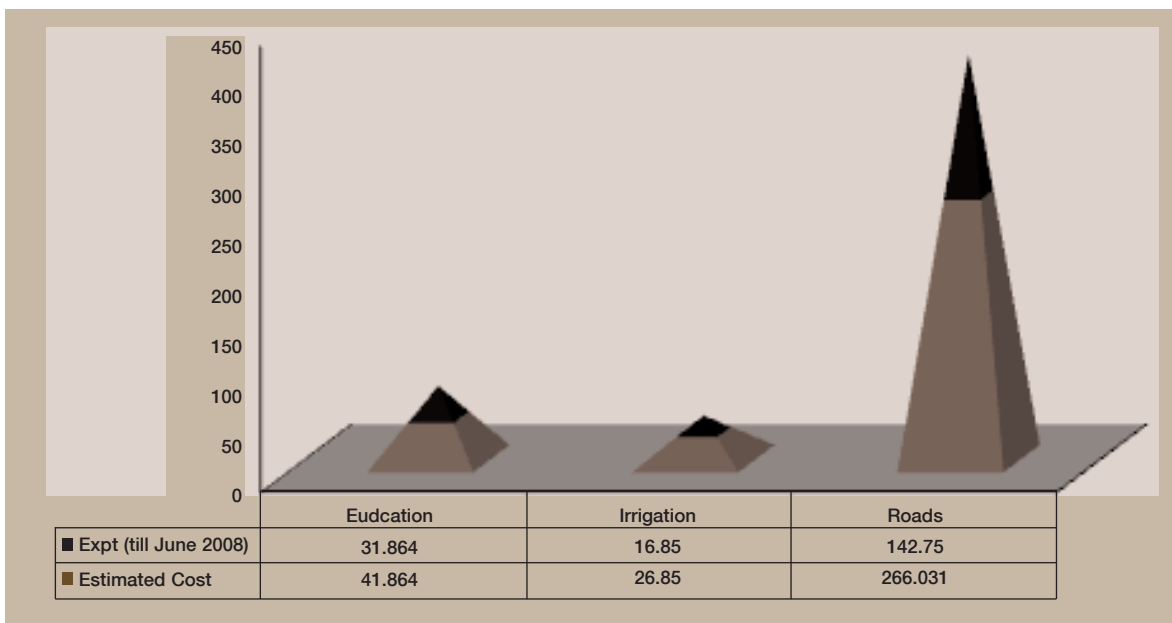
Improved natural resource management remains a challenge in the absence of baseline maps which could help reconcile basic data such as area of district, consolidated area, cultivated area, forests,

Figure 9: Exchanges and loops in Ziarat district



Source: General Manager, Pakistan Telecommunications Limited, Quetta, 2007

Figure 10: PSDP allocation for education, irrigation and road sectors for Ziarat district



Source: PSDP, 2008-09

rangelands, etc. From discussions and consultations it is clear that the reason for inertia amongst citizens, decision makers and stakeholders on the non sustainable over exploitation of ground water resource is not only lack of awareness. The onus for action rests with the Ziarat District Government, to lobby for the removal of subsidy on electricity for agricultural purposes and for the rehabilitation of *karezats*. The sustainability of livestock, agriculture, rangelands and forests rests on water availability as does that of human settlements.

The sources of water in the district include rain and snow, springs, tube wells, storage dams, and wells and *karez*. Generally high delta crops and orchards are grown in the district. The water recharge capacity is generally high due to vegetation and gravel in the streams.

The district is valuable as it is a watershed and is one of the greatest contributors to the water of the Nari River. The Mangi dam in Ziarat tehsil is being built to supplement the drinking water supply of Quetta city.

Given the limited data on poverty in Ziarat district proxy indicators from the MICS help to illustrate the nature of poverty. In Ziarat tehsil:

- 14 per cent (10+years) were un-employed (13 per cent male, 38 per cent female), 14 per cent (15+years) were un-employed (11 per cent male, 33 per cent female), 57 per cent (10-17 years) were un-employed (57 per cent male, 83 per cent).
- Out of a sample size of 336 households, 60.8 per cent had electricity, 6.4 per cent water connection, 9.3 per cent telephone, 0.2 per cent cable TV, 0.2 per cent internet and 38.8 per cent had none of previously mentioned connection.
- 1.1 per cent households possessed air cooler or fan, 0.6 per cent refrigerator or freezer, 3.7 per cent washing machines or dryers, 76.5 per cent sewing or knitting machines, 86.7 per cent radios, 3.6 per cent televisions, 2.1 bicycles, 2.1 motor cycles or scooters, 1.06 cars or other vehicles, 0.2 per cent water pumps and 6.4 per cent did not possess any of the above mentioned assets.

The economy of the district is largely confined to agriculture, livestock, and commerce and trade sectors. The percentage of the labour force employed in the agriculture sector was 45.9 per cent.

In 2007-2008:

- 1,907 wells irrigated approximately 5721 acres.
- 73 tube wells irrigated approximately 730 acres. All tube wells in the district were run on electricity.
- A significant number of *karezes* (although most of them have dried up over the years) and springs irrigated 1,900 acres of land. Thus the total irrigated area in the district is 8,351 hectares. There are streams (*nala* and *manda*) all over the district that drain water from the mountains, hills and uplands. Fast moving waters or flash floods cause erosion of agricultural lands.

There were 261,516 animals in Ziarat District (1,929 cattle, 12 buffalos, 120,054 sheep, 138,440 goats, 34 camel, 13 horses, 5 mules and 1,029 asses). In addition, there were 50,399 poultry birds. The per cent sampling error in the 2006 census data of sheep, goats, asses/mules and households reporting work animals is 23.52, 27.95, 27.42 and 26.09. This is on the higher side compared to most other districts.

Over the next few years Ziarat District Government, in collaboration with GoB and other development partners will prepare plans and strategies that will enable the implementation of the IDD.V. Endemic inefficiencies that result in inappropriate human resource systems, lack of transparency of information, and poor capacity will be integral to these plans as will gender mainstreaming. Furthermore the need for incentives for working in remote areas and improvements in the law and order situation will be addressed through these plans and strategies:

1. Population settlement strategy: zoning, land use, settlement hierarchies etc.
2. Disaster mitigation and preparedness strategy.
3. Social sector plans: education, health, and water and sanitation.
4. Culture and recreation strategy: ecotourism, handicrafts etc.
5. Livelihood diversification plan including strategies for mines and minerals, energy and private sector participation.

6. Natural resource management: integrated water, forests and protected areas, rangelands, and wildlife .
7. Agriculture plan including floriculture.
8. Livestock and poultry plan.
9. Monitoring and evaluation.

One of the major challenges that lies ahead is the alignment of district priorities with provincial financial allocations. As the situation stands currently there is a mismatch between priorities identified during the IDDV formulation process and provincial government priorities as reflected by financial allocations. The IDDV identified the

following priorities (descending order): drinking water, health and education. The provincial government has allocated finances based on the following priorities (descending order): communication and roads, urban planning and development, health.

The test of Ziarat's IDDV rests on its ability to mobilise resources - human, financial, political and environmental. This requires detailed sectoral plans and budgets, the merging of these sectoral plans into a detailed district strategic plan with a budget, and finally the alignment of financial allocations according to the district's strategy. Translation of the IDDV into action therefore requires proactive planning for efficient and effective achievement of district level goals.

1. Introduction

A 'development vision' expresses a desirable future condition envisaged by a nation, region or administrative unit, and charts a course of action for its attainment. It is a statement of commitment that expresses concerns and values of local communities regarding their priorities and resource allocation decisions.

Such a vision needs to be able to mobilise resources – human, financial, environmental and political – to achieve common development goals. A wide consultative process involving all stakeholders is a prerequisite for such a vision to evolve. This provides a way to capture local and collective thinking, transform a spirit of collective responsibility into action, and ensure ownership of choices made.

Translation of the vision into action requires proactive planning, this involves: setting of short, medium and long term targets; integration and interaction across sectors, tiers and partners; definition of roles and responsibilities; and incorporating learnings highlighted by the monitoring and evaluation system.



In the absence of democratic representation at the district level, the Integrated District Development Vision (IDDV) can play a pivotal role in ensuring effective, efficient, equitable and sustainable services. It can facilitate in the:

1. Translation of provincial policies, strategies and priorities;
2. Identification of district development priorities;
3. Articulation of budgetary priorities;
4. Introduction of people-centred planning and coordination, and participatory approaches to service delivery and monitoring;
5. Optimisation of systems and capacity (civil society, private sector etc.);
6. Inculcation of monitoring and evaluation of services;
7. Collation of baseline information;
8. Preparation of district wise sector specific plans; and
9. Integration of inter-sectoral coordination.

The Ziarat IDDV is robust, commands ownership from a range of stakeholders, and has maintained legitimacy under different legal and institutional dispensations.

The Ziarat IDDV was started when the Balochistan Local Government Ordinance 2001 (BLGO 2001) was still in effect. Under BLGO 2001, elected representatives headed local governments and were supported at the provincial level by transparent institutions such as the Provincial Financial Commission. The Balochistan Assembly repealed BLGO 2001 in March 2010.

As the first comprehensive sustainable development strategy for the district, Ziarat's IDDV represents a statement of district government policy. The Deputy Commissioner will implement the IDDV as they oversee and coordinate provincial departments at the

district level; the Vision will work towards reducing the deficit in trust and coordination that exists amongst stakeholders. A committee may be established (or the IDDV Committee may be continued) with representation from key stakeholders to oversee the implementation of the IDDV and to improve on it.

1.1 Procedure and methodology

Ziarat IDDV's legitimacy is anchored in a broad based consultative process. The IDDV was launched at a meeting presided by the District Coordination Officer¹ Ziarat in March 2009. An IDDV Committee was established that oversaw the formulation process.

The following principles guided the formulation process of the Ziarat IDDV:

1. Consultation with citizens, communities and key stakeholders;
2. Consensus building;
3. Long-term sustainability;
4. Integrated planning and management; and
5. Equity (gender, income etc.).

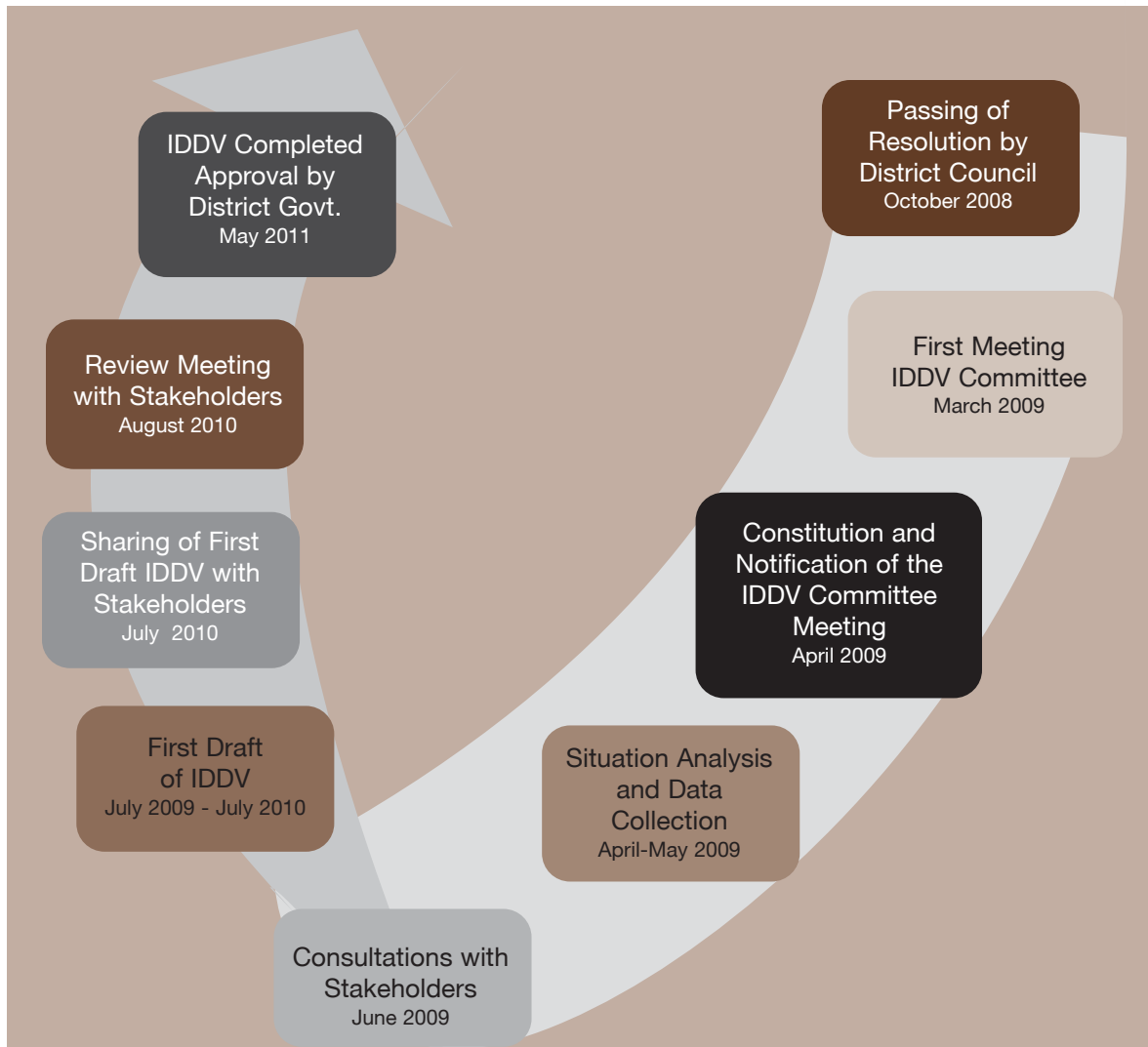
During the IDDV formulation process 16 meetings/workshops have been held in which a total of 131 people participated.

A search for published and un-published data and analysis pertaining to the district was undertaken and collated.² The information gathering procedure included discussions with:

1. Citizens and community representatives;
2. Private sector representatives (mining, agriculture, livestock, poultry, water, transport, business, tourism, traders/transporters from outside the district etc.);
3. Media (print and electronic);

¹ Provincial government nominee who worked under an elected District Nazim.

² All the data has not been included in this report. Interested readers may request Ziarat District Government or IUCN for additional data.

Figure 1: IDDV formulation process

Source: Based on data sent by IUCN 'IDDVs Chronology'

4. Academia (education and research organisations in the country);
5. Civil Society Organisations (CSOs) and Non-Governmental Organisations (NGOs) such as Balochistan Rural Support Programme (BRSP), Taraqee Foundation and Strengthening Participatory Organization (SPO);
6. International organisations, e.g. International Union for the Conservation of Nature (IUCN) and the Food and Agricultural Organisation (FAO); and
7. The district administration distributed a draft to stakeholders for views, feedbacks and comments. A consultative workshop was held on the IDDV before its endorsement.

1.2 Governance

Ziarat district was created in 1986 by bifurcating Sibi district and upgrading the status of Ziarat tehsil to that of a district. Sanjawi tehsil (Loralai district) was added to Ziarat district in 2001.

Ziarat district has two sub-divisions/tehsils i.e. Ziarat and Sanjawi, one Municipal Committee (MC) and six Patwari Circles (PCs).

Ziarat sub-division/tehsil consists of Ziarat Municipal Committee and the following two Patwari Circles:

- 1 Kachh PC: Ahmadoon, Gogi, Kachh, Kan and Tungi.

- 1 Kawas PC: Kawas, Spezandi, War Choom, Zargi and Zandra.

Sanjawi sub division/tehsil is entirely rural and consists of Chautair Qanungo Halqa and Saddar Qanungo Halqa and the following four PCs:

- 1 Chautair PC: Kazha, Shireen, Tandwani,
- 1 Poi PC: Poi, Vialah Aghbarg,
- 1 Baghau PC: Kharashang, Shenlez and
- 1 Sanjawi Saddar Salman PC: Chalez khalil, Chalez Mir Haji, Regorah and Sanjawi.

The responsibility for law and order in Ziarat district was divided between the police department, which was responsible for urban areas and Levies who were responsible for rural areas (Levies work under the supervision of Tehsildars).

Under the 18th amendment to the Constitution of Pakistan, subjects on the concurrent list have been transferred to the province. Currently, it is unclear how many of these functions will be transferred by the Government of Balochistan (GoB) to its departments' district administrations. In addition, the GoB is designing a new local government system. Therefore the structures, through which citizens engage with the state, for areas related to everyday life, remain in flux.

The GoB has decided to continue with certain decentralisation-neutral reforms that were brought in with the BLGO 2001, including District Government Budgets and a Local Government Grants Committee headed by the Finance Minister³ (taking from the Provincial

Finance Commission instrument under the BLGO 2001).

Despite the current governance situation there is room for the IDDV to contribute to improved governance in the district through the following eight areas:

1. Consensus in planning, target setting and fund allocation;
2. Participation, particularly of women in decision making;
3. Equity and positive discrimination for the poor and vulnerable;
4. Accountability and responsiveness to citizens;
5. Effectiveness and efficiency in service delivery;
6. Social accountability;
7. Transparency of information; and
8. Enforcement of laws.

1.3 Transparency

The Ziarat District Government recognises that citizens have the right to be informed and access information in a legible form. The GoB's Balochistan Education Management Information System (BEMIS) and the Balochistan Health Management Information System (BHMIS)⁴, enable spatial and temporal data analysis, and have been extended to the district level.

Table 1: Relative severity of hazards in Ziarat district

Hazard	Drought	Floods	Earthquake	Landslides	Communicable diseases	Fire	Locusts/ Pests
Incidence	-	2	3	2	-	2	-
Hazard	Crisis situation	Industrial & mines accidents	Transport accidents	Cyclones	Tsunami	Refugees & IDPs	
Incidence	-	-	-	-	-	-	

Source: Balochistan Disaster Risk Management Plan (2006)

³ Secretaries Finance, Planning and Development and Local Government are the members of the committee. The Administrative Secretary of the Local Government Board is the secretary to this committee. The committee allocates development and non-development funds for local councils. Information provided on phone by Additional Secretary Finance Mr. Kaleemullah on 20 September 2011.

⁴ In order to computerise and handle the enormous data at the provincial level, a basic Geographic Information System has been established to meet the overall needs of the province.

Box 1: Relevant GoP plans, policies and programmes

- Pakistan is a signatory to the Millennium Declaration. Importantly, for the purposes of the IDDV, many of these goals are to be implemented at the local level.
- Planning Commission's Framework for Economic Growth
- Poverty Reduction Strategy Paper, which provides a policy outline for poverty reduction and the achievement of MDG commitments.
- Integrated Water Resource Management Policy.
- Some national preventive health programmes in the district e.g. Expanded Programme for Immunization, T.B Control Programme, National Programme for Family Planning and Primary Health Care, Basic Development Needs and Malaria Control Programmes.

The Ziarat District Government is going to take the following steps to improve transparency:

1. Establish accurate basic data on the district; create a consistent set of baseline indicators;
2. Keep the citizens in the district informed of post BLGO 2001 dispensation;
3. Design an information transparency strategy:
 - a. Establish a simple Geographic Information System (GIS) portal in Ziarat district with a management information system and website;
 - b. Maintain electronic copies of records; promote, introduce and expand e-mail service in the areas where electricity and telephone facilities are available;
 - c. Digitise and print all district maps, and thematic data linked to the maps, improving efficiency and quality of decision-making;
 - d. Link district data to relevant data portals (Pakistan Census Organisation, BEMIS, BHMIS etc.);
 - e. Establish district information centres at the district, tehsil and union council levels;
 - f. Make information on public dealing including district budgets, revenues and user fees visible in public places, such as health centres, schools, offices, police stations, government information bulletins, and disseminate them through school teachers, health professionals, extension workers; and
- g. Disseminate the Freedom of Information Bill among citizens, NGOs, CSOs and the private sector.
4. Establish a district monitoring and evaluation procedure and in particular, prioritise community based monitoring and regulation of services;
5. Work with the media to enable outreach and awareness and to ensure citizen feedback (extending coverage and access by radio, especially for remote rural areas, enhance airing and presenting relevant Pashtu programmes on radio and television; translating Ziarat District Government's IDDV into Urdu and distributing copies to citizens; keeping stakeholders informed about the implementation of the IDDV etc.);
6. Work with the GoB to extend telephone (particularly mobile) and television coverage;
7. Train all departments on freedom of information laws, regulations, and on the importance of communication and dissemination of information; and
8. Undertake a capacity and training needs assessment for both the public and private sectors.

1.4 Gender mainstreaming

Ziarat District Government is committed to the enforcement of constitutional provisions for its citizens. The Constitution ensures that all citizens have equal rights and authorises the state to make special provisions for the protection of women and children. Women have the right to vote and hold office and are protected by the same labour laws as men. Women also have reserved seats in the

national and provincial assemblies. Under the BLGO 2001, women had reserved seats in local governments; hopefully, the policy of reserved seats for women will be continued and strengthened in the forthcoming local government legislation.

In Ziarat, although women comprise 48.1 per cent of the district's population in 1998⁵, the monopoly of economic and social power rests with men. Ziarat has a patriarchal culture and women's share in decision-making and economic activities is limited; their participation in public life is negligible.

Women carry a disproportionately large part of the workload, since household activities (fetching water and fuel wood, cleaning, child rearing, washing, taking care of livestock etc) are the sole responsibility of women.

Although women contribute significantly towards household income and they are responsible for the households food and basic needs, they are denied property rights, receive less food, their access to medical care is more limited than that of men, their contribution to the agriculture sector is generally not accounted for, and under the jirga system they are at times traded as commodities. A large number of women sew and embroider to enhance their income.

Ten village based women organisations were established under the Mainstreaming Biodiversity into Productive System in the Juniper Forest Ecosystem Project⁶ in Ziarat tehsil. Each had 15-25 women members. The project encouraged them to utilise their potential and trained them in various chores e.g. tailoring, handicrafts, preparation of pickles/tomato ketchup (for their own consumption) and poultry. Some members of also manage livestock for commercial purposes.

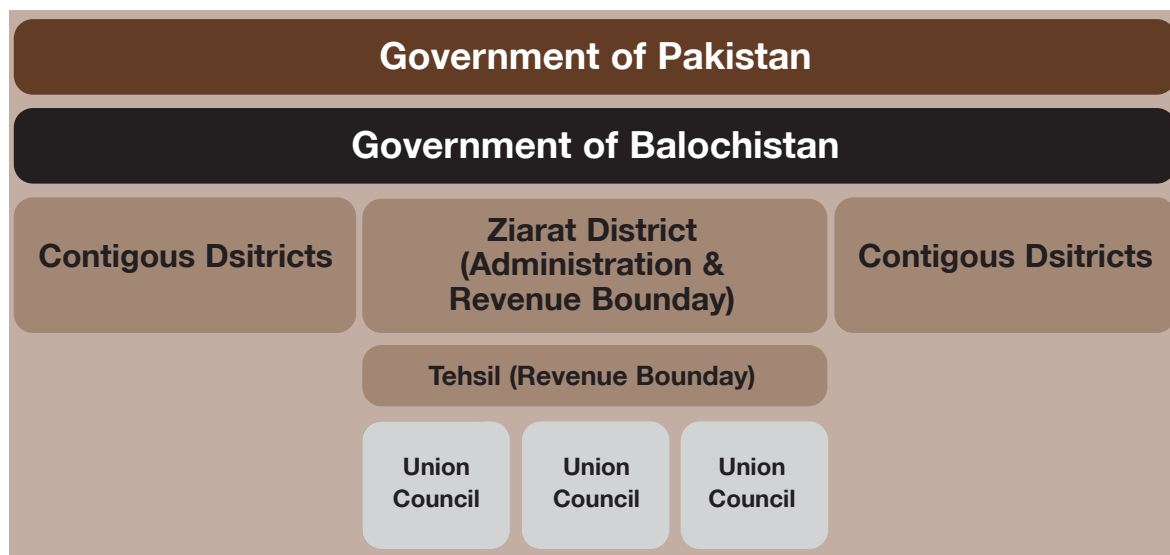
In Ziarat district⁷ the:

- 1 Literacy rate: 34 per cent males and eight per cent females.
- 1 Number of schools: 417 for boys and 140 for girls.
- 1 Family planning: three per cent of married women and their husbands were using modern methods of contraception.
- 1 Birth care from a skilled health worker: six per cent of women received it.

Ziarat District Government is committed to working towards the following goals:

1. Establishing a leaders forum where men and women sit together to discuss gender

Figure 2: Administrative and revenue hierarchy



5 Population Census Organisation (1998). District Census Report Ziarat 1998. Islamabad, Pakistan: Government of Pakistan.

6 This was a GEF/UNDP funded project.

7 Several sources.



The literacy rate amongst women is a dismal 8 per cent with most girls not making it to the schools

- | | |
|--|---|
| <p>equity and related issues (focusing on Ziarat specific issues, priorities and recommendations);</p> <ol style="list-style-type: none"> 2. Ensuring inclusion of women in future decision making; 3. Ensuring all government procedures are gender sensitive; 4. Raising awareness on gender issues amongst a range of stakeholders; 5. Raising awareness on the economic contribution of women; 6. Facilitating the Benazir Income Support Programme's (BISP) implementation as it provides financial incentives for women to register for the Computerised National Identity Card (CNIC). If families are eligible under the BISP scheme funds to meet basic needs are then transferred to the female head of household. Ziarat District Government is committed to an 100 per cent registration of women for the CNIC and Census; 7. Encouraging girls education: increasing the pace of girls enrolment in urban areas; creating incentives for girls education; introducing scholarships for girls from | <p>middle school onwards; and establishing an educational boarding facility for girls;</p> <ol style="list-style-type: none"> 8. Reviewing medical facilities availed by women; 9. Reporting cases of violence and harassment against women (enforcing the Prevention of Domestic Violence Act 2008 and Protection Against Harassment of Women at Workplace Bill 2010); and 10. Launching a reproductive rights and family planning campaign: <ol style="list-style-type: none"> a. Initiating discussion with tribal leaders and community members on population control. b. Employing the media as a key partner for raising awareness. c. Improving service delivery by establishing maternity centres with 24-7 services; links to the Lady Dufferin hospital in Quetta; and improving services provided by Lady Health Workers/Visitors (LHW/V) and Traditional Birth Attendants. d. Organising exposure visits of concerned government staff to other |
|--|---|

Map of Earthquake density of Balochistan

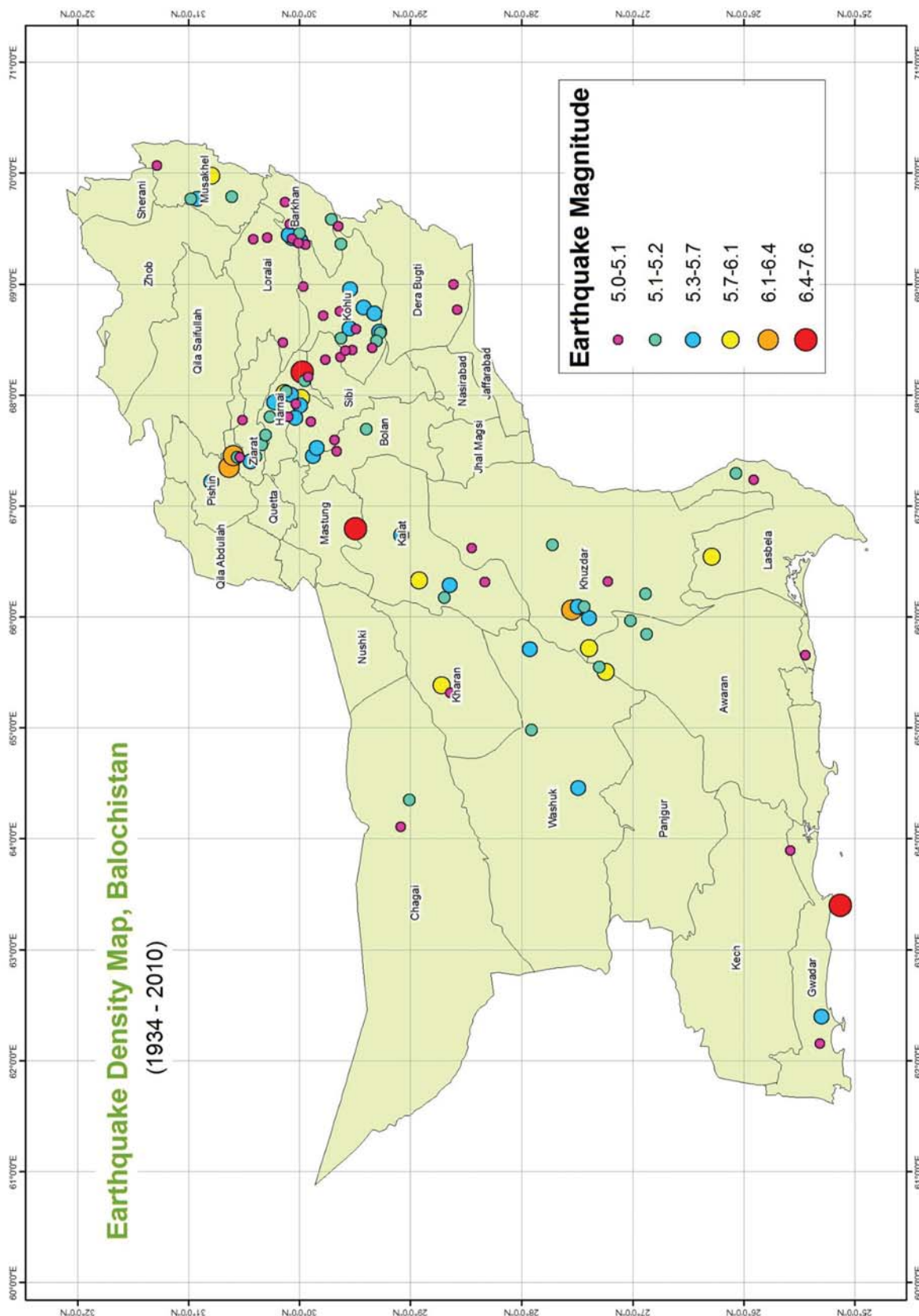
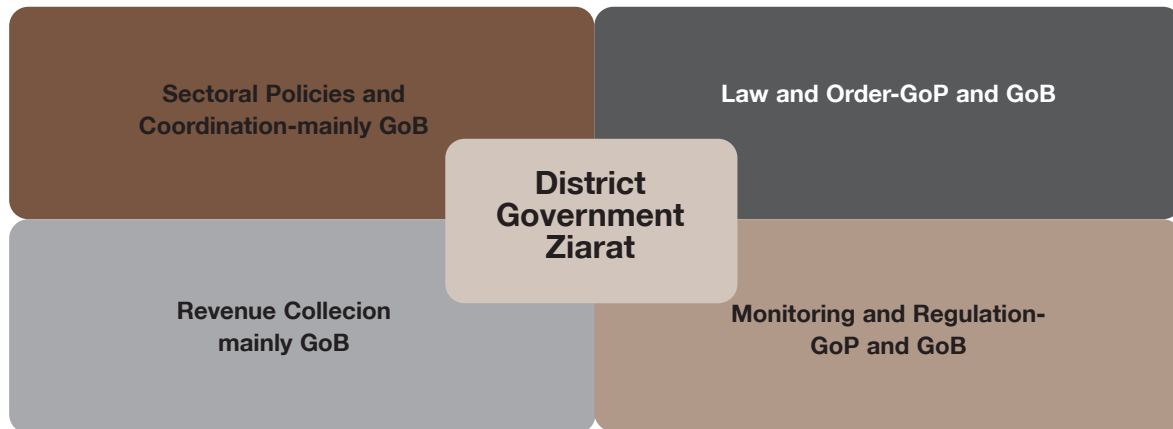


Figure 3: District coordination and state governance functions

parts of Pakistan and other Muslim countries where family planning programmes have been implemented successfully.

1.5 Disaster risk mitigation and preparedness

According to the GoB's Disaster Risk Management Plan 2008⁸, the relative severity of different hazards is:

- Medium for earthquakes.
- Low for floods, and landslides.
- Very low for droughts

In 2007, there were only three ambulances, six fire brigades, seven dozers, two graders and one truck in Ziarat. Precautionary response measures can reduce damage to the health of humans, livestock and natural resources.

Ziarat district is semi-arid and its climate is temperate. Consequently, it receives 200 mm to 400 mm precipitation annually, which is significantly higher than in most districts of the province. The major quantity of precipitation is received during the months of January-March in the winter and July-August in the summer. Light showers are received frequently, at higher elevations in Ziarat tehsil, during the monsoon season.

Ziarat Town and surrounding areas remain pleasant during the summer months ie from mid-April to mid-September. Sanjawi tehsil is comparatively warmer during the summer and less cold during the winter (this is with the exception of Juniper areas between Ziarat Town and Chautair).

The altitude of Ziarat district ranges from 1,181 meters above sea level near Zharstargai village (on the eastern border with Loralai district), and off Sanjawi Duki Road to 3,488 meters above sea level at the Khalifat Peak. The altitude of Ziarat Town is 2,543 meters above sea level.

There is no weather station in Ziarat district therefore the data generated by the Quetta station has to be used as a proxy. A minimum of two weather stations, one in Ziarat Town and the other in Sanjawi should be established.

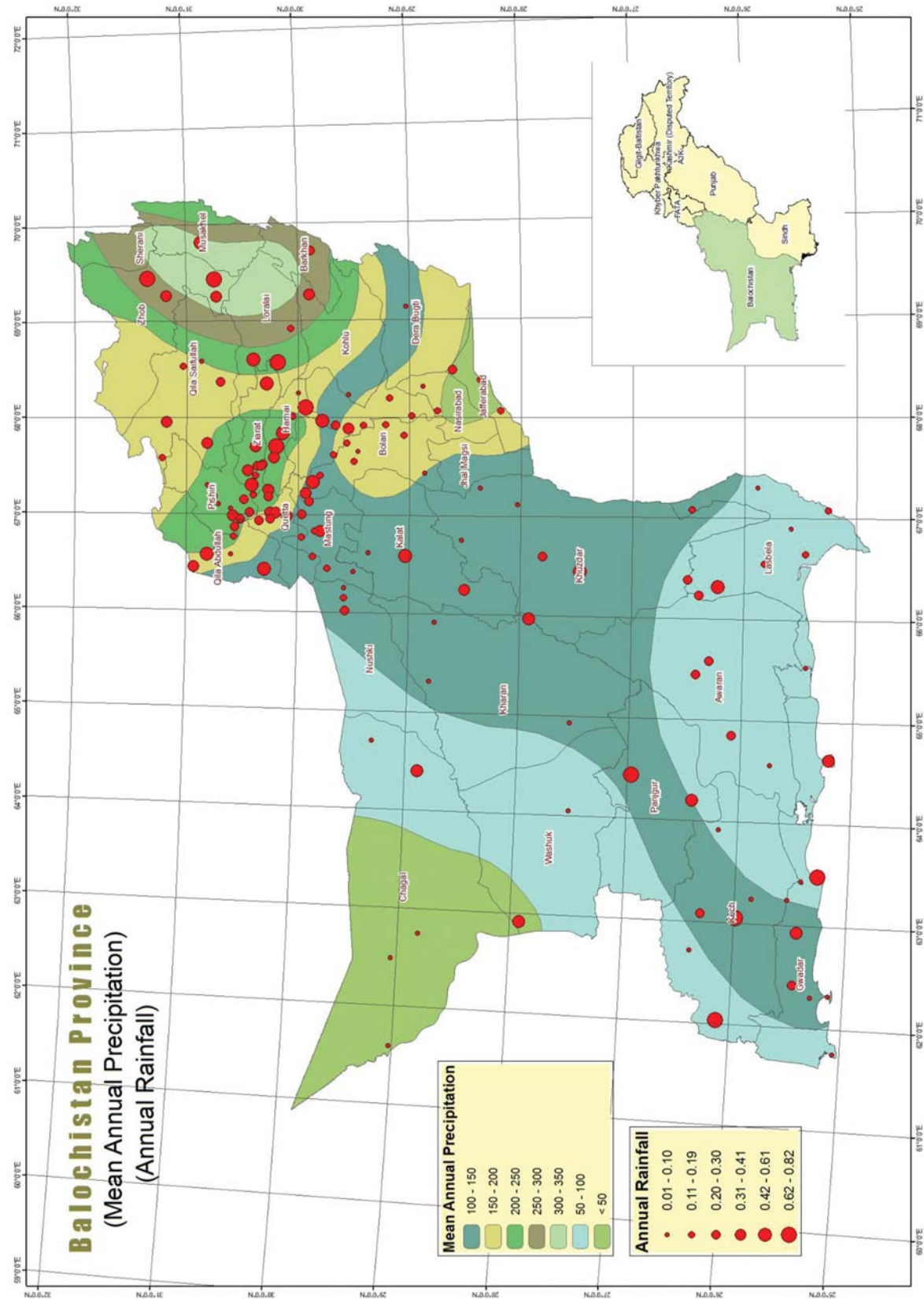
1.5.1 Earthquakes

The whole of Balochistan province lies in a seismically active region. The province has experienced catastrophic earthquakes in the past. A powerful earthquake devastated Quetta town and its adjoining areas in 1935. In this earthquake, measuring seven on the Richter scale, approximately 35,000 people were killed in Quetta alone.

According to the Meteorological Department, Quetta and Ziarat districts faced an earthquake measuring six on the Richter scale in 2000. On 29 October 2008, two major

8 Government of Balochistan (2006). Balochistan Disaster Risk Management Plan, 2006 [website]. <<http://unportal.un.org.pk/sites/UNPakistan/OneUN/DRM%20Documents/Balochistan%20Draft%20PDRM%20Plan.pdf>> Accessed 9 October 2011.

Map of Annual precipitation in Balochistan



earthquakes with similar parameters shook Ziarat and Khanozai tehsils and the surrounding areas of Suleiman fold-and-thrust belt of north eastern Balochistan. This came to be called the Ziarat Double Earthquake. This earthquake was the deadliest one experienced in the Suleiman Belt, after the 1935 Quetta earthquake. Ziarat Town was unscathed but Wam and Kan villages were badly affected.

1.5.2 Droughts

The last drought, a province-wide one, lasted nearly six years (1998–2004). In the recorded history of Balochistan, this drought is considered one of the worst. Periodic long spells of drought in the province do also affect Ziarat district. Generally, the Drought Severity Index for Ziarat district is 2, i.e. low. Ziarat district has been categorised by the provincial Board of Revenue as a district moderately affected by drought.

Conserving water, improved water storage and a strategy to procure water for critical needs is important to cope with droughts. The situation was particularly grave during the prolonged drought, as livestock suffered the most, not only from shortage of forage and water but also from contagious diseases (e.g. foot and mouth disease). Communities had limited knowledge of treating sick animals and lost a lot of animals. Household incomes and nutrition levels dropped significantly.

1.5.3 Floods, cold waves and landslides

The climate of Ziarat district is unpredictable. Some years, late frosts or hailstorms in the spring season damage flowers and harm the early fruiting of trees. Such conditions when

combined with periods of drought are disastrous. Ziarat tehsil receives significant snowfall. Heavy snowfall and extreme cold can immobilise most parts of Ziarat tehsil. Even areas that experience mild winters can be hit with a major snowstorm or extreme cold in the winter season. Winter storms can result in flooding, storm surges, blocked roads, loss of electric power and hypothermia.

The winter temperature ranges from (-) 160 C minimum to a maximum of 200 C. The hottest month is July (27.4 °C) the coldest is January (7.9 °C). In the peak of winter, temperature often falls below freezing point.

As the water recharge capacity of forests, rangelands and cultivated areas has decreased significantly, over the years, floods have become common in Ziarat district. Occasional westerly disturbances during the winter and the spring bring rain to steep slopes in the district. This results in flooding, causing damage to orchards and fields (especially those developed along the banks of streams).

Landslides are generally activated by storms, earthquakes (as seen in the earthquake of 29 October 2010). Landslides have increased due to the steepening of slopes (either by erosion or human modification for building of roads, housing or other infrastructure). Parts of Ziarat are prone to flash floods during heavy rains. The floods cause extensive damage to houses, standing crops, orchards, livestock and water supply schemes affecting thousands of people.

Extravagant use of juniper logs and even juniper trees, for flood protection in order to save orchards and fields during high floods, is done (for e.g. in the Sasnamana area and at certain points on the main Ziarat Valley road such as Zandra).

Box 2: Disaster mitigation and preparedness in Ziarat

The minimum elements for preparedness include drinking water for citizens and livestock, feed for livestock, marketing of livestock, prevention and control of livestock diseases, and fodder tree reserves.

Natural disasters have led to the following consequences in Ziarat:

- Drop in household income.
- Loss of household assets.
- Rise in food prices.
- Malnutrition and vulnerability to disease.
- Fodder shortage.

- Substantive destruction of apple trees and orchards.
- Migration of people.
- Heavy cost incurred by government in relief works.

Ziarat District Government will lobby and work with the GoB:

- Implement the provincial disaster risk management plan.
 - Establish a system on disaster preparedness.
 - Lobby for a drought emergency fund at the provincial and national levels.
 - Allocate specific responsibilities to different stakeholders.
- Disaster management and seismic briefings or trainings will be held for all stakeholders including senior administrators, professionals, members of legislative assemblies, medical professionals, education professionals, grazers, farmers, the private sector, CSOs and citizens on preparation, coordination, information dissemination, relief and rehabilitation.
- Improve data and its interpretation particularly for early warning systems in Ziarat; lobby for direct information from relevant organisations/agencies.
 - Establish a satellite monitoring system for Balochistan, early warning of droughts, and interpretation of data and dissemination of information.
- In Ziarat, plan for landslides at vulnerable places and keep the relevant machinery and equipment ready for clearing the affected areas, in particular highways, roads, bridges etc.
- Reconstruct affected villages, ensure proper town planning, based on geo hazard-zone mapping (including local geology, geomorphology, geohydrogeology, and geotechnical investigations).
- Evaluate flash floods and landslide hazards and design corrective techniques to reduce risk in Ziarat.
- Prepare district-wise Climatic Moisture Index and Soil Moisture Index maps for Ziarat with the help of remote sensing.
- Establish facilities for the development and marketing of livestock products from Ziarat (refrigeration of large quantities of meat are lacking currently, even at the provincial level).
 - Arrange mobile refrigerated meat storage vans during droughts along with set purchase prices to motivate owners to slaughter and sell their livestock, which is likely to die because of drought or disease.
- Agree on an emergency drinking water plan for Ziarat (for citizens and livestock).
- Build and operate a weather station in Ziarat.
- Collate and disseminate reliable data on temperature, precipitation, run-off, recharge, soil moisture and ground water which are needed to determine the impact and intensity of droughts.
- Design roads and bridges in Ziarat keeping in view vulnerability to flash floods and landslides.
- Retain waterways in their original dimensions in Ziarat in order to allow for increased discharge of rainwater during flash floods.
- Develop forest plantations in Ziarat of multi-purpose fast growing forest species (for fodder, fuel, control of soil and bank erosion, water recharge, enhanced biodiversity, and fodder tree groves for use for fodder/fuel only during long drought periods).
- Introduce and manage high protein molasses blocks for winter feeding and drought periods in Ziarat.
- Improve housing construction techniques keeping in view vulnerability to earthquakes and cold waves in Ziarat.
- Promote diversified livelihoods.

2. Population settlement patterns

The district should urbanise as per a plan that addresses opportunities for livelihood diversification, the empowerment of women, and substantive reduction in the unit cost of services while minimising concerns such as slum development, congestion, and pressure on social services.

Ziarat District Government is going to prepare a strategy for district wide population settlement within one year. Ziarat District Government plans to prepare strategic plans (including zoning, land use, markets, social sector infrastructure, protection of natural resources etc.) for Ziarat town and for the larger rural settlements. It will also propose the demarcation and notification of urban areas to the Population Census Organisation.

The plans will include:

1. Land use planning and development planning control in Ziarat Town and big villages;





Khalifat mountain in the Zizri area, Ziarat

- a. Ribbon-growth along roads and highways.
 - b. Traffic and transport management.
 - c. Regulations.
2. Social sector plan including education, health, water and sanitation;
3. Integrated water resource management plan including flood water management;
4. Livelihood diversification plan including ecotourism; and
5. Agriculture and livestock plan.

The district and Ziarat Town, derive their names from the shrine (Ziarat) of Baba Kharwari, an esteemed saint from the eighteenth century. Ziarat has contiguous borders with Pishin district, Quetta district, Loralai district, and Harnai district. The district is mountainous and hilly. The highest peak, Khalifat, is located in Ziarat tehsil and the Tor Ghar mountain in Sanjawi tehsil. These support the juniper forests, which are steadily degrading. Long, narrow and at times wide vales intersperse the mountains and hills and support agriculture. Ziarat Town and most

villages are generally located along the valley roads where there is agricultural land (orchards). In the interior (away from the main roads) the population is distributed sparsely, in villages or hamlets with small numbers of households, generally five to ten, families. Most of the settlements and communication infrastructure have been developed after substantive deforestation of juniper forests and devegetation in the district.

The seasonal migration of people to Harnai plains, to tide over the harsh winter, has been declining as lifestyles have changed (from semi-nomadic to permanent residences).

In recent years, major anomalies in population estimates have come forward. Vested interest groups have exaggerated their numbers for political and economic benefits; conversely, there is a tendency particularly in rural areas to conceal the actual number of females. There is no proper registry of births and deaths although the district administration (municipal committee, union councils, district councils etc) should keep these records.

Ziarat Town, with a MC, is the only officially recognised urban locality in the district and is approximately 133 km north-east of Quetta city. The major villages in Ziarat tehsil are

Table 2: Ziarat at a glance

Area	1,489 sq. km
Demographics	
Population - 1998	33,240 persons
Male	17,304 (51.90%)
Female	16,036 (48.10%)
Sex Ratio (males per 100 females)	107.9
Population Density	22.4 per sq. km
Urban Population	636 (1.91%)
Rural Population	32,704 (98.09%)
Average Household Size	7.4
Population - 1981	32,196 persons
Average Annual Growth Rate (1981-98)	0.21%
Literacy	
Literacy Ratio (10 +)	34.3%
Male	51.38
Female	17.02%
Housing Units	
Total Housing Units	4,503
Pacca Housing Units	686 (15.23%)
Housing Units having Electricity	3,686 (81.86%)
Housing Units having Piped Water	594 (13.21%)
Housing Units using Gas for Cooking	112 (2.49%)
Administrative Units	
Sub-Divisions	01
Union Councils	13
Mauzas	29
Town Committees	01

Source: Population Census Organization, 1998



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Juniper trees used as construction material

Ziarat, Kawas, Zandra, Ahmadoon, Gogi, Kachh, Kan, Tungi, Spezandi, War Choom and Zargi. Sanjawi village, the headquarters of the tehsil is located further east at approximately 63 km from Ziarat Town, 196 km from Quetta city, and 32 km from Loralai Town. Major villages in Sanjawi tehsil are: Sanjawi village, Tand Wani, Kazha, Shireen, Uchwani, Poi, Viallah Aghbarg, Kharashang, Shenlez, Chalez Khalil, Chalez Mir Haji, Regorah and Wajloon.

The district's area is 3,670 km² (Ziarat tehsil 1,489 km² and Sanjawi 2,181 km²) and its population is over 80,748 (NB: As part of the population boycotted the 1998 Census on the appeal of a political party the actual figures is estimated to be more)⁹.

The average annual growth rate of the population for the period 1998-2011 is estimated at about 2.7 per cent; this is significantly higher than the average annual growth rate between 1981-1998 which was of 0.21 per cent¹⁰.

About 34.94 per cent (about 36 per cent males and 34 per cent females) had never been married. More than 27 per cent of married women of reproductive age had no children, and 27.61 per cent had 6 and more children. The lifetime in-migration in the district was 1.27 per cent¹¹.

Ziarat District Government is going to prepare a strategy for district wide population settlement within one year.

2.1 Housing and settlement

Urbanising/urban areas in Ziarat have poor urban infrastructure and are now faced with increasing pressure for housing. Streets are generally narrow and there are no streetlights. Most of the houses are constructed with mud and unbaked bricks, without proper toilets and drainage facilities. The houses are constructed without any city planning or urban

9 Population Census Organisation (1998). District Census Report Ziarat 1998. Islamabad, Pakistan: Government of Pakistan.

10 ibid.

11 ibid.

design and without the approval of the municipal administration.

The air in the district falls within the range of “moderate air quality index” meaning that no negative health effects are expected and it is suitable for outdoor excursion. Air quality is relatively better in the rural areas.

In rural areas, the quality of construction is poor and although houses are spacious they lack proper sewerage and sanitation systems. *Kacha*, mud houses or unbaked bricks are a common sight in rural areas. The majority of the population is settled in *killies*/villages. Both in rural and urban areas people generally own the houses they live in.

77.30 per cent of the walls of the houses in rural areas in Ziarat tehsil are made of unbaked bricks with mud bonding. In Ziarat MC, 91.38 per cent houses have roofs made of cement/iron sheets as compared to 14.41 per cent in rural areas. In Ziarat MC, about 95 per cent of the housing units have the standard *pacca* walls made of baked bricks/blocks and stones with cement bonding compared with only 13.36 per cent in rural areas.

The vulnerability of the housing units made of unbaked bricks and mud bonding in the event of an earthquake is very high as was seen during the “Earthquake of October 29”, 2008. However, rescue operations for such houses as opposed to concrete roofs were easier. Juniper is often extracted illegally for use as timber in the construction of houses (beams, planks, doors, windows etc.).

According to the District Census Report (1998), there were 4,503 housing units in Ziarat tehsil, 4,076 in the rural part of the district (92.52 per cent). More than 19 per cent of the housing units in Ziarat tehsil have single rooms (Ziarat Town 31.03 and rural areas 18.78 per cent); and 2-4 rooms (62.93 in Ziarat Town and 60.80 per cent in rural areas).

The level of congestion was higher in rural areas. Persons per housing unit/household size declined significantly between the period 1981-98 from 10.47 to 7.4. 81 per cent of housing units have kitchens, 92 per cent bathrooms and about 39 per cent separate or shared latrines.

According to the MICS-2004:

- 33.2 per cent households had access to piped water.
- 62.2 per cent households were without latrines.
- 81.9 per cent households had electricity.
- 60.1 per cent households had radios, 11.8 per cent households had television, and 29.4 per cent households read newspapers.
- 6.4 per cent households had no possessions and 38.8 per cent had no utilities.

3. Social sectors



Ziarat district is ranked eighteenth by MICS (2004) and second by SPDC out of a total of 26 districts in Balochistan¹².

3.1 Education

According to MICS-2004, the literacy rate for the population of Ziarat, for the age bracket 10 years and above was 22 per cent, with male literacy rate at 34 per cent and eight per cent for women.

Out of approximately 34 per cent people who were able to access education, 27.29 per cent achieved primary level education, 18.48 middle level, 17.55 matriculation level, 4.47 intermediate level; there were 2.68 graduates and 1.28 postgraduates in the district¹³.

¹² This variance is due to the different indicators used for analysis.

¹³ See Directorate of Education (2008-09). Balochistan Educational Management Information System (2008-09)[website]. <<http://www.bemis.edu.pk>>. Accessed 3 January 2012 for more information.

The primary school net enrolment ratio for 5-9 years was 42 per cent. The ratio of female to male enrolment was almost 1 to 2 in both rural and urban areas.

According to MICS-2004 among children aged 5-9 years only 42 per cent were enrolled in primary schools excluding *Katchis*. Of students, 80 per cent had access to in-village schools while 87 per cent had access to schools within two kilometer of Ziarat. The percentage of students who changed their schools was 3 per cent.

According to the 2007-08 statistics provided by BEMIS, there were 417 boys schools, 140 girls schools, one male and one female degree college in the district.

There was a significant improvement between the period 2004-2005 and the period 2007 - 2008 in (1) male and female college staff employment (2) male enrolment in high school (female enrolment decreased) and (3) increase in female schools at middle school level (and teaching staff, and enrolment of both boys and girls).

BEMIS is a very useful facility but its full potential is not being utilised in planning and management. The data regarding private educational institutions is inconsistent. The role of the Balochistan Education Foundation and its performance are not clearly visible in improving education in the district.

Many organisations are involved in the development of the education sector in Ziarat district. The National Commission for Human Development and some other NGOs are actively pursuing interventions in the education sector, both in the formal and non-formal education sectors.

The involvement of the private sector is very low. In 2007-2008 there was only one private school, with 6 teaching staff (two male and four female) and an enrolment of 91 students (25 boys and 66 girls). International donors have supported primary education (especially of girls), particularly in the rural areas.

Table 3: Education at a glance

Level	Gender	Education Institutions (2007-08) No.	Enrolment (2007-08) No.	Teaching Staff (2007-08) No.
Primary	Boys	336	19,933	565
	Girls	125	11,916	193
	Total	461	31,849	758
Middle	Boys	33	3,426	378
	Girls	11	1,408	130
	Total	44	4,834	508
High	Boys	18	1,710	395
	Girls	4	160	95
	Total	22	1,870	490
Total	Boys	387	25,069	1,338
	Girls	140	13,484	418
	Total	527	38,553	1,756
Intermediate Colleges (2007-08)	Male	1	-	16
	Female	1	-	10
	Total	2	-	26

Sources: BEMIS, 2007-08

3.2 Health

In Ziarat, in addition to allopathic doctors, *hakeems*, and homoeopaths also treat patients. A number of quacks are also active.

Women's health in Ziarat district is poor. At the district level the Executive District Officer Health supervises all the health services, vaccination programmes and drug control in the district.

According to the Health Directorate of Quetta, in 2006-07 there were 14 BHUs, eight dispensaries, one 20-bed DHQ Hospital (the medical superintendent is in charge of district headquarters hospital) one MCH Centre, one Mobile Dispensary, three RHCs of 40 beds each and one T.B Clinic in Ziarat district. The health staff in Ziarat district in 2006-07 consisted of 29 doctors (23 males, six females), three nurses (two females, one male) 16 LHV and 30 *dais*/ midwives and 321 trained Traditional Birth Attendants.

According to the MICS-2004,

- 27.4 per cent of women received ante-natal care from a dai. 53.4 per cent consulted no one for post natal care.
- One per cent of married women had heard of HIV/AIDS;
- Three per cent of non pregnant married women and their husbands were using modern methods of contraception while 15 per cent used other methods. 29 per cent married women knew how to avoid pregnancies while 13 per cent had 'ever used' any method to avoid pregnancy. 67 per cent of children under 5 years of age are under weight and only 10 per cent of the population was covered by LHWs.
- 1.7 per cent children were reported to have had an incidence of diarrhoea in the past year. In the survey 'in the past two weeks' 11 per cent had been admitted to an hospital, 57 per cent consulted a government facility, 68 per cent used ORS/ORT, 22 per cent high fever, 16 per cent cough with difficulty breathing and 17 per cent with diarrhoea.
- Preventive health and child protection, level of user knowledge of iodised salt

was 15 per cent while 2 per cent used iodised salt.

- 21 per cent were fully immunised (12-23 months), 33 per cent partially and 46 per cent were not immunised at all. 46 per cent children under 5 years of age had BCG scars.

The most common diseases in the district are respiratory diseases, anaemia, skin infections, renal diseases, worm infections, diarrhoea, dysentery, malaria and hepatitis. 8,460 blood slides were examined, 713 malarial cases were found and all of them were treated in addition to others with obvious symptoms during 2007.

The number of patients suffering from suspected cholera, suspected meningococcal meningitis, poliomyelitis, measles, neonatal tetanus, diphtheria, whooping cough, goitre, suspected viral hepatitis, suspected AIDS and snake bite were not recorded or reported separately.

3.3 Drinking water and sanitation

In Ziarat tehsil piped water inside the houses was available to 33.2 per cent of the housing units including 72 per cent in Ziarat Town, another 24 per cent fetch water from outside the houses. Hand pumps, wells and ponds are other common sources of drinking water both in urban and rural areas inside or outside the houses.

According to the MICS-2004:

- 26 per cent households had an improved drinking water source and 22 per cent had access in the house; 25 per cent had access within one kilometer (or half an hour return travel time); and 26 per cent had access within two kilometer (or half an hour travel time).
- Seven per cent households had adequate sanitation; and two per cent households had proper disposal of waste water.
- One per cent had adequate disposal of solid waste.
- 94 per cent households resported washing hands before eating and zero per



© IUCN, Shah Murad Aliani

Water is a precious commodity for agriculture in Ziarat

cent reported washing hands after 'going to the latrine'.

Regarding availability and use of sanitary means of excreta disposal; 93 per cent households used open places, 0.2 per cent households were connected to a public sewer; 0.8 per cent households were connected to a septic system; 4.5 per cent households had a pour flush toilet; 1.4 per cent households had traditional pit latrines (closed); and 2.3 per cent households gave no response or their response was missing.

According the staff of the Clean Drinking Water for All (CDWA) Project, almost all the installed plants are operational and are maintained by the Public Health Engineering

Department (PHED), which is the executing agency for CDWA, in the Government of Balochistan. Most of the plants built under this project are non-functional.

There is no data available on waste disposal methods of households. The hygiene conditions are even worse in the rural areas of district Ziarat. Streets are unpaved and there is no drainage system. Wastewater stagnates outside houses, breeding mosquitoes and flies, thus creating public health hazards.

In recent years some international donor agencies have assisted communities financially and technically, to improve sanitation.

Box 3: Ziarat social sector plan – education

Objective: Ensure access and quality education in Ziarat; Meet the MDG targets as applicable to Ziarat.

The scope of the Ziarat Education Plan will include:

- Map and directory of existing stakeholders and service providers.
- District map showing existing infrastructure (including functional and non functional):
 - Ghost schools; defunct schools; functional public sector schools.
 - Private schools.
 - *Deeni Madaris*.
- Agreement on indicators for the purpose of monitoring; establishment of a baseline in Ziarat:
 - Household income disparities.
 - Gender disparities.
 - Urban-rural disparities; sub-*tehsil* disparities.
 - Standardised indicators for shortage of schools, colleges and higher education institutions.
 - Standardised indicators for shortage of teachers, particularly female teachers.
 - Teacher quality as measured in results and outcomes. Qualitative feedback from parents, principals, teachers, students on standardised questions.
 - Standardised indicators for quality of building and built infrastructure (availability of toilet, boundary walls in girls schools, sports etc).
 - Standardised indicators for desks and chairs.
 - Standardised indicators for books and teaching aides.
 - Standardised questions for qualitative feedback from community representatives, tribal leaders, parents, mothers, and children themselves on low enrolment and drop out rates.
- Assessment of the current and projected needs for Ziarat.
- Review of the MDGs and National Vision 2030 targets as applicable to Ziarat.
- Implementation of measures to raise awareness on education as a human right in Ziarat.
- Focus on access to education for children from poor families and girls in particular in Ziarat:
 - Reach out to families which cannot afford schooling with free schools, free uniforms, hygiene kits and stipends for girl children.
 - Offer scholarships to gifted students.
- Evaluation of the work, contribution and impact of different service providers in Ziarat:
 - Enforcement of traditional supervisory visits, participatory monitoring, and effective application of BEMIS.
 - Identification of means to improve teacher-child ratio (e.g. address high logistic and travel cost).

- Inclusion of measures to ensure security for educational establishments in Ziarat district.
- Effective coordination between Ziarat district and GoB on:
 - BEMIS.
 - Teacher training, training of local literacy enhancement staff, refresher courses.
 - Merit based appointments.
 - Review of ratio of operational: non operational expenses and salary: non salary expenses.
 - Performance based salary system.
 - Financial incentives for working in remote areas.
 - Separate wings for girls in colleges.
 - Improved security measures and accommodation for female teachers.
 - Upgrading of single teacher schools to multi teacher schools.
 - Community managed monitoring systems (creating real time links with BEMIS).
 - Scholarships for teachers.
 - Secure work environment for women.
 - Construction of boarding houses for students and teachers.
 - Collaboration with the Balochistan Education Fund.
- Improving governance, accountability and participation in Ziarat by:
 - Replicating the good practice model from Qila Saifullah and Pishin where community elders have identified good teachers, have assured the teachers housing and protection, and lobbied for their transfer to their areas.
 - Disseminating information regarding state funds and their use.
 - Regulation of private schools (a) fees (b) quality of education (c) facilities (d) faculty (e) bringing *deenis madaris* into the mainstream education system.
 - Establishment of platforms for engaging with parents, civil society and private sector organisations (establishing Parent Teacher Associations etc).
 - Piloting projects in collaboration with NGOs/CSOs and the private sector (e.g. literacy with a particular focus on women's literacy).

Box 4: Ziarat social sector plan – health

Objective: Ensure access to primary and preventive health care for all in Ziarat; meet the MDG targets as applicable to Ziarat.

The scope of the Ziarat Health Plan will include:

- Map and compile a directory of existing stakeholders and service providers in Ziarat:
 - districtmap showing existing infrastructure (functional and non functional).
- Review of existing facilities, establishment of a criteria for continuing with or closing facilities, exploration of optional uses for these facilities.
- Assessment of current and projected needs for Ziarat.
- Identification of indicators for the purpose of monitoring, establishment of a baseline for Ziarat:
 - Household income disparities.
 - Gender disparities.
 - Urban-rural disparities; sub-*tehsil* disparities.
 - Intra rural disparities.
 - Age disparities.
 - Standardised indicators for shortage of health facilities and services.
 - Standardised indicators for health and allied health professionals/services.
 - Health care service quality as measured in results and outcomes and qualitative feedback from care givers and patients on standardised questions.
 - Standardised indicators for quality of building and built infrastructure (availability of toilet, boundary walls etc).
- Strategy for: maternal health, reduction in child mortality, arresting the spread of communicable diseases, increased immunisation coverage for Ziarat:
 - Standardised indicators for maternal health and child mortality.
 - Standardised indicators for communicable diseases and immunisation coverage.
 - Standardised indicators for public health.
 - Standardised indicators for non-communicable diseases for e.g. mental health and nutrition.
- Strategies for preventive, primary and secondary health care services at the district level, and links for patients with tertiary health facilities in Quetta city:
 - Preventive health care should include mental health, awareness on fundamentals of health, vaccination and immunisation, safe drinking water and sanitation, safe disposal of wastes (solid, hospital, mining and industrial) and control of air, water and noise pollution.
 - Awareness on contagious and communicable diseases including HIV/AIDS, hepatitis etc.
- Strategy for the distribution of fortified food and health supplements particularly to women and children in Ziarat.
- Agreements with the private sector to transport patients in Ziarat.
- Promotion of latrines and smoke efficient stoves which have a significant impact on the health of women and children.

- Creation of an enabling environment for and incentives for the private sector for providing affordable health care services in Ziarat.
- Motivate and provide incentives to the medical and paramedical staff to work in remote rural areas. These may include economic incentives and security and facilities such as transport and accommodation, especially for female staff in Ziarat.
- Action Plan for hospital/medical waste management for Ziarat.
- Action Plan for cleaning of ground water (agro chemicals, sewage, waste from mining etc) for Ziarat.
- Strategy to improve human resources and their management, counter absenteeism, fill vacant posts and recruit female staff in Ziarat.
- Lobby with the GoB for the following in Ziarat:
 - Improved coordinations with BHMIS.
 - Refresher and training courses for staff.
 - Performance based salaries.
 - Community managed monitoring linked to financial incentives.
 - Preference to O&M over capital expenditure.
 - Strong monitoring and evaluation systems.
 - Improved supplies of medicines (coordination with the Essential Drug Programme).
 - Identifying a clear role for indigenous medicine.
 - Improved coordination with special health services provided by the GoB to improve or facilitate health programmes.
- Improving governance, accountability and participation in Ziarat:
 - Disseminate information regarding funds and their application.
 - Regulate private medical services (a) fees (b) quality of health care (c) facilities (d) faculty (e) bringing *indigenous medicine* under a regulatory framework.
 - Establish platforms for engaging with, civil society and private sector organisations; establish networks for doctor, nurses, LHW/V, and Trained Birth Attendants.
- Pilot projects in collaboration with NGOs/CSOs and the private sector in Ziarat.

Box 5: Ziarat social sector plan – water and sanitation

Objective: Ensure access to safe drinking water and adequate sanitation facilities for all in Ziarat; meet the MDG targets as applicable to Ziarat.

The scope of the Ziarat Water and Sanitation Plan will include:

- Directory and map of stakeholders and services.
 - District map showing existing infrastructure (including functional and non functional, informal and formal).
 - Detailed maps of as-built schemes.
- Principles and working policies for Ziarat:
 - Review of existing facilities, establishment and enforcement of criteria for continuing with or closing down schemes/services.
 - Review of user fees.
- Indicators for the purpose of monitoring, establishment of a baseline for Ziarat:
 - Unaccounted for water and non revenue water.
 - Willingness to pay.
 - Unit cost of operating PHED and Clean Drinking Water Program built schemes.
 - Ratio of built to functional schemes and infrastructure.
 - Gender disparities in access and workload for collection of water.
 - Standardised indicators for quality of and built infrastructure.
 - Urban-rural disparities; sub-*tehsil* disparities; intra rural disparities; age disparities.
 - Public health indicators.
 - Quality of services as measured in results and outcomes, and qualitative feedback from citizens on standardised questions.
- Strategies for ensuring the following in Ziarat:
 - A minimal amount of water is available to all (this may also include water available through hand pumps where the water table is within 50 feet).
 - Installation of water treatment facilities at distribution or reservoir points.
 - Reduction in losses during transmission.
 - Recycling of sewage, after appropriate treatment, for agriculture.
 - Preventive health care and awareness on sanitary practices; recruitment of female staff for this purpose.
 - Enabling environment for and incentives for private sector participation.
 - Improved human resources and their management.
 - Pricing and policing of drinking water.
 - Increasing number of plans and projects with community participation (during planning capital works and O&M).
 - Assessing current and projected needs.
- Raising awareness on efficient consumption of drinking water and on the consequences of drinking water without treatment; promoting cost effective methods for treating water prior to drinking in Ziarat.

- Consensus on a district Code of Conduct on Water Use.
- Take action on unaccounted for water, non revenue water in Ziarat.
- Provide a range of services with different price tags: household connection; communal connections; communal filtered etc.
- Ensure all schemes are demand driven and none are supply driven (in particular provincial and federal schemes tend to be supply driven and little care is taken to determine unit cost of O&M for these services; this more often than not leads to sunk investment) in Ziarat.
- Incentives for improved sanitation in Ziarat:
 - Incentives and awards for open-defecation free villages and union councils.
 - Financial support for building septic tanks and improved latrines in low-income areas.
- Lobby with the GoB for the following in Ziarat:
 - Coordination on a water and sanitation management information system.
 - Refresher and training courses for staff and private sector contractors/plumbers etc.
 - Increase in private sector involvement through incentives and training e.g. septic tank management SMEs etc.
 - Performance based salaries.
 - Community managed monitoring linked to financial incentives.
 - Preference to O&M over capital expenditure.
 - Strong monitoring and evaluation systems.
- Provide support for making latrines in houses on a self-help basis; safe disposal of waste water, solid waste and hospital waste; and raise awareness on the importance of washing hands after using the toilet in Ziarat.
- Preparation of a strategic solid waste management plan; construct and manage a landfill in Ziarat.
- Encouragement and support for collection and segregation of solid waste by households and disposal of waste to a collection point, from where the Ziarat TC can transport and dispose it in proper landfills.
- Improvement in the supply chain for recycled goods - market for recyclable/ reusable materials, composting of biodegradable waste, recycling of usable waste (metallic articles, glass, wood, paper etc.) recycling of waste water in Ziarat.
- Pilot projects in collaboration with NGOs/CSOs and the private sector in particular to make a concerted effort for raising awareness on public health in Ziarat.
- Improvement in governance, accountability and participation in Ziarat:
 - Disseminating information regarding funds and their application including water quality, air and water pollution, and public health.
 - Regulation of private sector service providers (a) fees (b) quality of water (c) facilities (d) open dumping (e) environmental degradation (f) public health concerns.
 - Establishment of platforms for engaging with civil society and private sector organisations.

4. Natural resource management

4.1 Land use

Ziarat District Government recognises that natural resource management in Ziarat needs to be studied in the context of the district becoming water-scarce; characterised by poverty; and with limited access to basic facilities. This is in a context of: extreme aridity and periodic drought and a shift from arid farming and livestock grazing to irrigated agriculture and orchards; overgrazed range-lands and low productivity livestock; decline in wildlife populations; and lack of forest management (notified state forests, and forest vegetation).



Land use change needs to be guided by the government keeping several factors in mind; some of these include: environmental safeguards, regulation and arrest of over exploitation of natural resources, enforcement of law, low institutional capacity, need for strategic planning and improved management, and lack of awareness on the impact of natural resources in the short term on income and livelihoods.

the district is susceptible to changes due to the rapid growth in population (requiring expansion of settlements) and the deteriorating food security situation in the province.

Ziarat District Government is fully aware of the need to apply land use management as a tool for developing its agriculture and horticulture sectors, and capturing the advantages brought by the proximity to Quetta city and the RCD Highway. Ziarat District Government will work with the Survey of Pakistan, the Pakistan Space and Upper Atmosphere Research Commission, Board of Revenue and private sector organisations, such as World Wildlife Fund (WWF) and IUCN, to see if satellite image related modalities may be used to validate land uses. Steps will be taken to procure archival maps of the district.

4.2 Integrated water resource management

The complexity of water resource management poses many challenges. Fresh water is the most precious commodity for people living in arid areas like Ziarat.

Water managers need to solve a range of interrelated problems involving a wide range of stakeholders, navigating conflicting priorities and varying contexts. The environmental, social and political aspects of water management span a wide array of issues and areas. These include: water policies; water rights; water uses; water infrastructure development; river basin management; watersheds; wetlands; water storage; water allocation; water distribution and sharing arrangements; drought preparedness; and water-related disputes and their resolution. The management of water in the context of climate change is one of the most pressing challenges of our times.

Water resource management has to take into account the following competing demands on water:

1. Drinking and domestic needs;
2. Food production (agriculture, livestock etc.);

3. Economic infrastructure development and use (energy, transport, health, industry, tourism etc.);
4. Natural habitats and biodiversity;
5. Conservation for periods of drought; and
6. Conservation for future generations.

Social participation in water management and governance is traditionally found in tribal societies such as Ziarat. Traditional water management systems, e.g. *karez*s, have not been able to transform into modern water management systems therefore traditional and indigenous wisdom has been lost.

The most critical management challenge in arid areas is how to deal with the short periods of excess water and flooding on the one hand, and long periods of little or no water.

The sources of water in the district include rain and snow, springs, tube wells, storage dams, and wells and karez, most of which have dried due to excessive pumping out of water by tube wells. Generally high delta crops and orchards are grown in the district. The water recharge capacity is generally high due to vegetation and gravel beds in streams.

The district is valuable as it is a watershed and is one of the greatest contributors to the water of the Nari river.

The two tehsils of Ziarat district drain separately and in the opposite direction. The boundary between the watersheds and tehsils lies close to Ziarat Town in the north-east. These watersheds have sub watersheds in each tehsils.

The three main sub watersheds in Ziarat tehsil are separated by a saddle like structure on the Kach-Ziarat Road from where the main valley starts. It drains through Khum Tangi (gorge) to Mangi. Mian Qasim Manda also flows to Mangi. The water of northern and western parts of the tehsil drains through two streams, one passing by Ahmadoon and the other by Kach, both joining to form the main stream, which flows east along the Kach Harnai Road.



A thick concentration of Juniper forest in Koshki valley, Ziarat

In Sanjawi tehsil the sub watersheds in the Chautair-Sanjawi (central main) drain in to Galai Manda, Wadan Manda, Wan Manda and Kanni Mandi. They all join near or before flowing up to the Baghao area. The northern sub-watersheds are separated from the central main sub-watersheds by hills running parallel from east to west starting from Ziarat tehsil and draining mainly in to Salam Manda, Shah Gai Manda and Gurmai Manda.

The available water in the Nari hydrological basin is 37.8 MCM and all of it is extracted. The water from the watersheds of Ziarat mainly contributes to the water of Nari and thus is very critical for the health of the Nari basin. In the future, part of it will be stored in the Mangi dam and used for the drinking water supply for Quetta city.

The water channels in Ziarat, Ahmadun and Gogi valleys were damaged by the earthquake of 29 October 2010. Most of these have been repaired.

The development of agricultural lands with tubewell irrigation, as has started recently in Sanjawai tehsil along the Wani-Sanjawai Road, will be difficult to sustain due to the

likely depletion of the ground water in the district. The installation of tube wells, like elsewhere in the province, is not being monitored in Ziarat district.

4.3 Forests

Forests are vital for environmental services and for maintaining the ecological balance of an area. They play an important role in the supply of wood and non-wood products including water, grazing, Medicinal and Aromatic Plants (MAP); maintaining watersheds; wildlife habitats and dependent species of wild animals and plants; control of erosion and conservation of soils; sequestration of carbon; provision of countryside recreation; and ecotourism.

The Forest and Wildlife Department manages the forests and plantations, and is also responsible for the rangelands. There are two types of forests found in Ziarat district; natural forests and artificial forests (comprising rangelands, plantations, conifers etc).

The Executive District Officer Forest is the district head of the department and is assisted

by Range Forest Officers, Foresters and Forest Guards. Temporary labour is employed for forestry operations in the district.

One of the largest juniper forests in the world of a single juniper species (*Juniperus excelsa*) are to be found in Ziarat and adjoining Harnai and Quetta districts. They are therefore of global importance. There are old monumental juniper trees in the district none of which have been dated scientifically. The juniper ecosystem is unique and its surface area magnifies the significance of biodiversity in the district. The nomination of the juniper forests of Pakistan as a World Heritage Site has been on the cards for a long time.

Other ecosystems found in the district include broad leaved scrub (comprising wild olive, *Acacia modesta* and *Dodonaea viscosa* in degraded areas), wetland ecosystem although limited to water reservoirs and seasonal streams, as well as a diversity of agricultural ecosystems with their associated plant and animal species.

Communities are poor and depend on forests for meeting basic needs. In the case of the juniper trees this combined with parasitic infestation of mistletoe has led to substantive degradation. With the financial assistance of UNDP GEF, the project Mainstreaming Biodiversity Conservation into Production systems in the Juniper Forest Ecosystem has been implemented by IUCN in partnership with GoB and local communities. It covers an area of 150,000 hectares, of which approximately 100,000 hectares is covered by

juniper forests. The goal of the project is to conserve biodiversity in the juniper forest ecosystem and improve livelihoods of local communities. The project:

- Works closely with local communities to determine acceptable ways to modify grazing systems and incorporate biodiversity concerns into the juniper forests.
- Strives to determine ways to improve sustainable energy use, and demonstrate innovative and sustainable models for tourism/recreation and hunting.
- Works in selected communities to build government-community partnerships.
- Is developing capacity – in key government agencies and in communities – to replicate and disseminate learnings to other areas.

The survey of mistletoe (“*Tasma Pa*” in Pashto) infestation (which kills a juniper tree in about 25 years) revealed that colossal damage has taken place and immediate steps were needed for pruning and removing the infected trees. The study also concluded that the ever-increasing sedentary and trans migratory population (of citizens and livestock) in Ziarat and surrounding valleys poses a great threat to the juniper ecosystem.

It is clear that some practices are easier to curb such as the felling of branches from juniper trees which are used to make temporary pens for open grazing; trampling and foraging of young regeneration of

Table 4: Protected areas in Ziarat District

Name	Location/ Area (Ha)	Established in (year)	IUCN Category	Established to Protect	Current Status
GAME (WILDLIFE) SANCTUARIES					
Ziarat	30° 24' North 67° 44' East 37247 ha	1971	V	Markhor and Urial	Notified
Sasnamana	6607 ha	1971	IV	Juniper	Notified
Gogi	10364 ha	1962		Juniper	Notified
Wam	30° 27' North 67° 43' East 3887 ha	1962		Juniper	Notified

Source: Frisina et al. 1998; Groombridge 1988; IUCN 1997; WWF-P 1997.

junipers; and lighting fires in open areas near juniper trees.

Ziarat district, because of a range of topography, landscape, climate, and juniper forests is rich in wildlife and biodiversity. A number of protected areas have been established in the district. Statistics are not available on wild animal species found in the district. Independent expert surveys show that populations of these species have declined for several reasons.

4.4 Rangelands

Range based livestock production systems are one of the major sources of livelihood for people living in rural areas. Small ruminants, such as sheep and goats, are better adapted to the harsh environment and greatly outnumber large ruminants. It is estimated that the number of sheep and goats is many times that of the carrying capacity of the rangelands. Poor nutrition results in high mortality, high parasite loads and stunted growth of animals. Livestock owners sustain high losses, especially during droughts.

One measure that can have a significant impact would be organising coordination between the Rangelands and Livestock departments. Rangelands are under the administrative control of the Forest and Wildlife Department but are used primarily for livestock grazing.

The Ziarat District Government will ensure coordination at the district level between the departments.

In Ziarat District Rangelands are used for:

- Livestock grazing. Most of the livestock in the district depends on the rangelands.
- Rangelands constitute the major portion of the watersheds.
- Other products of the rangelands include medicinal plants, fuel wood and wildlife.
- A significant area of rangelands is used for agriculture, housing and settlements, and communication purposes. More rangelands are destined for conversion as a result of further developments.

Box 6: Ziarat natural resource plan – integrated water

Objective: Manage existing waters efficiently and conserve water resources for future generations.

The scope of the Integrated Water Management Plan for Ziarat will be:

- District Water Management Committee (scope to include all aspects of water).
- Directory and map of stakeholders.
- Ziarat district map showing 'Water Sources' and district Land Capitalisation Plan'including:
 - Delineation of detailed micro basins in the district and evaluation of their potential for developing surface water storage.
 - Estimating ground water sources (by using latest radar imageries), and comparison with benchmarks, where available for future planning.
 - Analysis of ground water depletion, year wise, based on tube well use.
 - Resistivity survey of potential groundwater area.
 - Detailed delineation of sub-watersheds in the district and evaluation of their potential for forestry, agriculture, watershed management, rangeland management and water development (developing surface water storage, hill torrent control, spate irrigation and rainwater harvesting).
- Target indicators and baselines for Ziarat.
- Assessment of current needs and linkages with other sectors; instruments and incentives for better coordination in Ziarat.
- Assessment of the impact of climate change in Ziarat.

- Management of flood water in Ziarat.
- Harvesting of rain water for direct consumption; increasing water storage capacity; check dams and other infrastructure in Ziarat.
- Coordination with the following sectors in Ziarat: forestry, protected areas, rangelands, drinking water and sanitation, health, and disaster management.
- Awareness for all citizens and stakeholders on the environmental and ecological functions of water sheds and their impact on Ziarat.
- Promotion of water efficient technologies for Ziarat: land levelling, different types of irrigation systems such as precision irrigation, drip irrigation (introduced in Quetta), sprinkler irrigation and spate irrigation.
- Demand for policy reforms at the federal and provincial levels and endorsement of a district Tube Well Policy for Ziarat. Implementation of the federal water resource management policy. The water table is depleting at a rate of ten feet per year due to the installation of a large number of tube wells. The water level has dropped to about 1,000 feet in certain areas.
- Pricing of water extracted by tube wells.
 - Removal of subsidy on electricity for tube wells.
- Extension work and dissemination of research on optimising the soil-plant-water combination for sustainable use of water in Ziarat.
- Ensuring the treatment of sewage before it is recycled for vegetable cultivation, orchard irrigation or before draining it into streams; ensuring that solid waste does not block and pollute water courses in Ziarat.
- Motivating communities to construct local check dams for conserving water and planting trees in Ziarat.
- Watershed management operations in forests and rangelands in Ziarat.
- Pilot projects in collaboration with NGOs/CSOs and the private sector.

Box 7: Ziarat natural resource plan – forests and protected areas

Objective: Manage existing forests efficiently and conserve forest resources for future generations, ensure conservation of forest biodiversity and maintenance of ecosystem functions including regulation of waters, combating natural disasters, mitigation of climate change, improvement of habitats in protected areas, promotion of ecotourism, and the greening of the urban environment in Ziarat

The Forest and Protected Areas Plan for Ziarat district will include:

- Map using satellite images showing forest areas, forest cover, vegetation in the forests, property rights, land capitalisation, and flora and fauna (although livestock grazing is the main land capitalisation in the district, the exact area and location of rangelands is not available, and no details are available for the cultivable waste area and the actual forest cover area).
- Establish target indicators and baselines for Ziarat.
- Raise productivity of forests in Ziarat; discourage alien invasive species; restore the ecology of degraded forests in Ziarat by planting a maximum number of indigenous species.
- Improve capacity to manage forests in Ziarat by introducing techniques for regeneration, improving the management of diseases, and piloting community based management and regulation.
- Promote alternative energies for fuel consumption in Ziarat district. Pilot alternative energy sources in Ziarat: biogas, solar PV, wind and solar thermal.
- Promote affordable alternatives to fuel wood and the extension of gas infrastructure in Ziarat; reduce wood wastage in Ziarat.

- Develop nurseries in Ziarat of soil and water compatible plants.
- Raise forest plantations and support agro forestry on communal lands, along the stream and river banks, around storage and recharge dams, and on the borders of fields with multi purpose trees (fodder, firewood, timber, watershed, biodiversity, and carbon sequestration) in Ziarat.
- Expand efforts beyond tree and game species to the general flora and fauna in Ziarat; raise herbs, resins and gums in Ziarat.
- Set up scientifically managed protected areas (state owned/community owned and managed biodiversity rich areas for forests and wildlife) for ecotourism and sustainable application in Ziarat.
- Raise awareness on the current situation and the future (including climate change, population growth) using specific data on Ziarat; assess the current and future needs for Ziarat.
- Promote community participation in management and regulation of forests, rangelands and protected areas in Ziarat.
- Lobby with the GoB for Ziarat:
 - Implementing the Biodiversity Action Plan for Pakistan (2000) and the National Forest Diversity Vision (2006) as applicable to Ziarat.
 - Preparing a province specific action plan for biodiversity, wildlife and protected areas with specific plans, policies and targets for Ziarat.
- Pilot projects in collaboration with NGOs/CSOs and the private sector e.g.dwarf palm related handicrafts, MAPs etc in Ziarat.

Box 8: Ziarat natural resource plan – wildlife

Objective: Secure species and promote sustainable conservation.

The Wildlife Plan for Ziarat district will include:

- Map of existing animals in the district.
- Directory of stakeholders and retailers.
- Photographs, map and list of endangered species.
- Baseline data and target indicators.
- List of individuals involved in trade of animals (legal and illegal).
- Strategies for:
 - Promoting hunters' associations focusing on sustainable practices. Community based trophy hunting, has succeeded in other parts of Balochistan (Torghar), Khyber Pakhtunkhwa, and Gilgit-Baltistan. Dureji is another success model. These can be replicated
 - Community regulation and enforcement of laws and policies in Ziarat. Piloting community participation, through social mobilisation, organisation, awareness raising, capacity building and economic incentives.
 - Lobbying with GoB on the preparation of a provincial action plan for wildlife, rangelands biodiversity, wildlife and protected areas, and livestock with Ziarat specific plans, programmes and interventions.
 - Designing and implement ecotourism projects.
- Implementation of pilot projects in collaboration with NGOs/CSOs and the private sector in Ziarat.

Box 9: Ziarat natural resource plan – rangelands

Objectives: Ensure that rangelands in Ziarat are restored and are used sustainably.

The Rangeland Plan for Ziarat district will include:

- Map of district with:
 - Land use and zoning area.
 - Forest cover (actual area).
 - Rangeland (actual area).
 - Forest areas (actual area).
 - Ownership (private, communal, disputed) of land.
 - Land settlement and records.
 - Livestock.
 - Wood and vegetation use for energy.
 - Access to rangelands by income.
- Map of rangelands in Ziarat by type and vulnerability.
- Map of rangelands in Ziarat by grazing potential and short term rejuvenation. Invest in reseeding, seeding, development of water points, and placement of salt licks for improving the rangelands in Ziarat; this will also help in enhancing recharge of water, conservation of biodiversity, especially plant species.
 - Ecological zoning of rangelands.
 - Identification of water points and salt licks.
- Establishment of productive rangeland identification and monitoring in Ziarat through satellite imagery.
- Establishment of baseline indicators and targets for Ziarat such as:
 - Ratio between livestock: rangeland.
 - Animals and livestock-forage ratio (to work towards alternative feeds such as molasses).
- Lobby with the GoB on: preparing specific plans, programmes and targets for Ziarat for rangelands, biodiversity, wildlife and protected areas, and livestock in the context of a province wide plan/strategy.
- Plan and implement grazing management in Ziarat; discourage and reduce gradually the free grazing of livestock; raise pastoralist awareness on rangeland management in Ziarat; implement interventions and programmes on community participation/planning, management and regulation for rangelands in Ziarat.
- Coordinate between the Forest Department (responsible for rangelands) and the Livestock Department; launch programmes in Ziarat for improved breeds, feed (including rangeland management) and health of livestock.
- Engage with nomads to see how nomadic paths and rangeland management can be complementary in Ziarat.
- Coordinate with NGOs, CSOs and the private sector to pilot new initiatives.

5. Agriculture and livestock

Poor management of land resources and bad agricultural practices have resulted in loss of fertile top soils, depleting fertility and deteriorating the soil structure. Lack of attention to water-crop-soil requirement will over time lead to reduction in agricultural productivity. Ziarat district is characterised by mountains and high to low hills in east-west direction, interspersed by valleys and small plains. The valleys and open areas have potential for raising orchards, and growing vegetables and crops if irrigation water systems are developed. Ziarat tehsil has the largest spread of contiguous Juniper forests in Pakistan. This has great potential for ecotourism. Sanjawi tehsil has great potential for growing organic and off-season vegetables, and for developing its marble mining and related value added enterprises.

The total area of the district is 330,100 hectares. The total cultivated area of the district is 5,458 hectares of which fallow land was 2,420 hectares and net sown was 3,038 hectares¹⁴.



¹⁴ Government of Balochistan (2006 and 2008-09). Agricultural Statistics of Balochistan 2006, 2008-2009. Quetta, Balochistan: Government of Balochistan. Data from different sources may be inconsistent.

There were 531 tractors (11 government and 520 private), 8 private threshers and 14 bulldozers (9 government and 5 private).

According to the Agricultural Statistics of Balochistan in 2007-08, wheat production (high yielding variety) was 34 tonnes at 2000 kilograms/hectare in irrigated areas (17 hectares) as compared with other varieties of wheat grown in similarly irrigated areas (13 hectares) which was 23 tonnes at 1,769 kilograms/hectare. Production of onion on irrigated land was approximately 450 tonnes over 33 hectares.

Agriculture in Ziarat district depends largely on irrigation except a small area of wheat crop grown on the *sailaba* system. *Khushkaba* practice is less common. Most of the area is irrigated by owner operated tubewells installed.

In 2007-2008:

- 1,907 wells irrigated approximately 5,721 acres.
- 73 tube wells irrigated approximately 730 acres. All tube wells in the district were run on electricity.
- A significant number of *karezes* (although most of them have dried up over the years) and springs irrigated 1,900 acres of land.

Thus the total irrigated area in the district is 8,351 hectares. There are streams (*nala* and *manda*) all over the district that drain water from the mountains, hills and uplands. Fast moving waters or flash floods cause erosion of agricultural lands.

5.1 Livestock

Livestock is an important source of livelihood for the majority of the rural population. It not only generates income for the owners (sale of animals, wool and hides), but is also a major source of nutrition (milk, yogurt, *lassi*, *kurt*, meat). In addition, some livestock is important for transportation particularly in those areas where road based transport is not available or where the area is hilly or the terrain rugged.

Over the past three decades the importance of livestock and rangelands has decreased

due to the extension of tube well supported agriculture. However, reversal is foreseen, as tube well agriculture is not likely to be viable for much longer.

Ziarat District Government will proactively work with the Livestock Department on: animal husbandry; disease prevention and treatment (veterinary hospitals and dispensaries); artificial insemination; input supplies; dairy development; extension services especially for raising awareness among farmers regarding livestock management.

Marketing services and price setting are influenced by the private sector and public sectors.

26.3 per cent households own livestock with a mean market value of Rs. 50,000. According to the District Census Report (1998), in Ziarat tehsil there were 151,744 animals (1,462 cattle, 37,913 sheep, 111,077 goats, 91 mules and 1,201 asses). In addition, there were 38,917 poultry birds.

According to the Livestock Census Report (2006), there were 261,516 animals in Ziarat District (1,929 cattle, 12 buffalos, 120,054 sheep, 138,440 goats, 34 camel, 13 horses, 5 mules and 1,029 asses). In addition, there were 50,399 poultry birds. The per cent sampling error in the 2006 census data of sheep, goats, asses/mules and households reporting work animals is 23.52, 27.95, 27.42 and 26.09. This is on the higher side compared to most other districts.

Regarding male cattle (ie cows), 188 were more than three years of age (41 for breeding and 147 others) while 285 were below three years of age. Out of a total 1,425 female cattle 1051 were in milk, 358 dry and 16 had not yet calved. 31 cattle were below three years of age. The majority of cattle in the district were in age classes 01-02 to 09-10 years. The age class 05-06 has low representation. The number of male calves below 1 year is disproportionately higher than female calves.

Milk cows and buffalo were 1,409 and one respectively. The number of sheep was 120,054 (34,257 adult male, 56,011 adult female and 29,786 young-below one year).



Local breed of cows

Animals by herd sizes were 6-15 animals (800 herds), 16-30 (306), 1-5 (294) and 31-50 (239).

There were 1,138,440 goats in the district (22,592 adult male, 59,362 adult female (46,34 milk 9,423 in milk, 6,770 dry, and 6,251 not yet lambed were of ages one year or more, while 56,486 were below one year of age below 1 year). Herd sizes were in ranges 6-15 animals (460 numbers), 1-5 (539), 101-150 (237) and 201-350 (147) of more females than males except in herd size 6-15 and 31-50. There were no herds in the herd range of 16-30.

Camels are mainly used for ploughing or other agricultural purposes, while asses are used for agricultural and non-agricultural purposes. There were 34 camels in the district (based on reports from 22 households) of which 29 (24 male and 5 female) were of ages three years or more while 4 were below three years of age. There were 13 horses (reported by 5 households) in which 10 were of 3 years or more while 3 were below three years of age. There were five mules (one household reported), all of three years or more.

There were 1,029 asses of which 818 were of 3 years or more and 212 were below 3 years of age.

The 2006 census only helps in providing indicative data on livestock for two reasons: (1) substantive number of livestock died or were killed and/or sold during the drought of 1998 2004 and (2) Sanjawi tehsil was then a part of Loralai district.

During the period 2004-07 there were two veterinary hospitals, 21-24 (numbers fluctuated from year to year). In 2007, 110,213 animals were treated, 111,401 vaccinated and 439 were castrated. In 2006-07, 4,111 animals (2,349 sheep, 1,185 goats and 577 cattle/buffalo) were slaughtered in slaughter houses and 6,584 animals (2,349 sheep, 2,512 goats and 1,723 cattle /buffalos,) were slaughtered in the open.

According to the Livestock Census (2006), 317 households reported that 12 cows/buffaloes were artificially inseminated. During 2006-07, out of a total of 1,425 cows, 15 were artificially inseminated during 2006-

2007, 305 animals were not artificially inseminated due to the personal dislike of owners (73.19 per cent), 21.45 per cent owners reported that the Artificial Insemination Centre was located too far away, and 1.26 per cent owners reported that previous Artificial Insemination results were unsatisfactory.

5.2 Poultry

Poultry is an important asset for women, as they are allowed to retain the meagre income they make from the sale of poultry and/or eggs, and poultry provides a source of nutrition for the entire family.

There were 50,399 poultry birds in the district (cocks 12,780, hens 23,328 and poultry 14,291). There were 568 flocks with 1-10 birds, 778 flocks with 11-25 birds, 617 flocks with 26-50 birds and 124 flocks with 51-75 birds. At the time of the census in 2006 there was no poultry farm in the district.

5.3 Fruits and vegetables

The district produces significant quantities of fruits and vegetables, which are marketed in the province and outside. There are numerous intermediaries in the marketing process. The dissemination of accurate and timely marketing information is vital in helping farmers make good marketing decisions. It helps in the short term to decide when and where to market the produce, what price to expect and in the long term, what to produce. In Quetta and Dera Murad Jamali districts, there is a well-developed system of wholesale markets.

The climatic conditions in Ziarat tehsil are suitable for the cultivation of temperate fruits such as apples, cherries, plums, peaches and grapes. Ziarat district produces significant quantities of fruits, which are marketed in the province and outside. The area under fruit cultivation is 2,843 hectares (almond 167 hectares, apple 2,240 hectares, apricot 112 hectares, grapes 70 hectares, peaches 19 hectares, cherries 201 hectares and other fruits 34 hectares). This has remained static between 2005-2008; this means that improved productivity and introduction of value added is



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Cherries, a high value crop

essential, particularly to counteract the rapidly depleting ground water resource.

Almost all temperate fruits are grown in Ziarat district including apricots, apples, cherries, plums, peaches, grapes, almonds etc. 2,240 hectares of land in and around Ziarat are under apple orchards. Apple production in the district in 2007-08 was 31,593 tonnes on an area of 2,240 hectares in 2006-07. The yield of apple per unit has increased by 45 per cent over the period 2006-07 and 2007-08 (increased to 14.1 tonne/hectare from 9.7 tonne/hectare). The apples of Ziarat tehsil, particularly the black and red *kulu* varieties are of outstanding quality (both colour and taste) as the trees receive required temperature during the winter months. However, water requirements for apple cultivation are very high. Ziarat is one of the two areas in the province of Balochistan that produces the best quality of apples (the other area is Kan Mehtarzai in Qila Saifullah district).

A significant quantity of black and red cherries is also produced in Ziarat district. The cherry picking season lasts for a short duration and is generally limited to the month of June.

Box 10: Ziarat agriculture plan

Objective: Ensure sustainable growth, food security and income generation opportunities in Ziarat.

The Ziarat Agriculture Plan will include:

- Map and directory of stakeholders service providers and retailers.
- Land settlement and land records; land consolidation; ownership rights; cultivable area.
- Map and list of all crops grown.
- Map soil quality (vulnerability to wind erosion, adoption of agro chemicals, and cultivation practices).
- Directory of stakeholders and service providers (agricultural machinery mechanics etc).
- Map and list of potential crops and an assessment of water consumption, energy consumption, income, yield and sustainability in Ziarat
 - Analysis of soil-crop-water requirement, compatibility and efficiency.
 - Adoption practices to prevent soil erosion and desertification.
 - Construction of mini dams and development of their catchment areas.
 - Adoption of integrated pest management.
 - Fruit and vegetable documentation and expansion, greenhouse (tunnel), off season vegetable production and organic farming.
- Links with:
 - Directorate of Agriculture Services for Crop, which has also set up an online information system, that collects marketing information from a variety of sources in both the public and private sectors.
 - Directorate of Agriculture Extension; which provides subsidised seeds and through its extension field staff introduces the application of new technology (optimum use of water, fertiliser, seeds, maintaining top soil etc.) to farmers.
 - Directorate of Agriculture, Economics and Marketing which is now planning to develop a provincial database so that relevant agencies can operate more efficiently.
 - AGMARKET in Balochistan has decentralised the marketing information system to improve access to information at the district level.
- Promote in Ziarat:
 - Low delta crops and orchards such as pistachios, grapes, olives and almonds.
 - Cultivation of MAP.
 - Cultivation of tomatoes, onions, potatoes, melons and chillies.
- Lobby with the GoB on measures that can be given immediate effect e.g. availability of bull dozers. Enable access to agriculture machinery in Ziarat and create small and medium enterprises around their maintenance.
- In Ziarat design a community managed zoning plan for crops based on water-soil optimisation.
- Facilitate access to inputs; manure and compost; seed and fertiliser availability; quality of seeds; and marketing of certified seeds in Ziarat.
- Compile list of possible sectors in Ziarat where value addition can be tapped for fruits and vegetable; identify potential agro based small and medium enterprises; and introduce Global Good Agricultural Practices (GGAP) and International Feature Standard (IFS) certification for processing plants, pack houses and transport of agricultural produce to make it more export-worthy.
- Adopt practices to reduce post-harvest losses and reduce waste of low grade fruit in Ziarat.
- Improve storage and transport of agricultural produce, fruits, vegetables, and flowers in Ziarat.

- Design a strategy, with the GoB, to reform the Market Act and adopt modern marketing practices for agricultural produce which are more inclusive, transparent and fair.
- Design an effective business model for Ziarat in order to link agricultural produce to markets.
- Pilot cooperative farming in Ziarat.
- Establish certified nurseries.
- Take steps to establish germ plasma units for the preservation of available genetic materials and propagation of new genetic material.
- Restructure current labs to make them more self-sustaining in Ziarat.
- Enter into partnerships in Ziarat with the private sector, NGOs/CSOs for providing extension services. Pilot with NGOs, CSOs and the private sector in Ziarat on water efficient irrigation (e.g. laser land levelling, drip and sprinkler irrigation organic produce, and GGAP and IFS certified products for export).

Box 11: Floriculture in Ziarat

Floriculture includes the growing of and use of flowers, raising ornamental plant nurseries, ornamental gardening and landscaping.

It is a comparatively new agricultural activity in Balochistan. Various flowering plants have been introduced at different places in the province (seeds, bulbs, corms, rhizomes, tubers etc.) The private sector has come forward in this business.

The Agriculture Department grows flowers for demonstration and sale at Quetta and it plans to establish flower shops at divisional headquarters for the sale of cut flowers. The flower shop at Quetta is almost ready and the ones at Kuchlak and Kalat are underway. Floriculture requires exacting inputs, investment, skills, intensive work, which in turn requires taking risks. More importantly, it requires communication and storage infrastructure.

Floriculture can improve the socio-economic conditions of the farmers if they include growth of cut flowers, and raising nurseries of forest, fruit and ornamental plants on farmlands. Floriculture is not a traditional practice in Ziarat. The expertise in floriculture in the Department, especially its extension staff is limited, and so is the scope, which is confined to cut flowers:

- Develop and implement a Floriculture Promotion Strategy for Ziarat.
- Prepare feasibilities for small and medium enterprises and small farmers in Ziarat. Raise awareness, provide business related information, and build capacity of nursery growers, professionals and amateurs.
- Prepare a map of Ziarat district with known floriculture species; make recommendations on appropriate climatic and water conditions.
- Prepare a list of experts in Ziarat, province and rest of the country.
- Prepare a list of commercial enterprises across the country.
- Flowers are a perishable commodity and require rapid access and certain markets. Gradually create adequate transportation and storage in Ziarat.
- Arrange exposure visits for interested farmers from Ziarat, to see ornamental plant nurseries and fields where flowers are grown for the cut flower market, at the Quetta Agricultural Farm and in Pattoki, Punjab.
- Promote the use of cut flowers, garland flowers and flower petals in Ziarat.
- Facilitate procurement, multiplication and marketing of flower seeds, bulbs, and ornamental plants-herbs, shrubs and trees in Ziarat.
- Provide technical advice and service regularly to growers in Ziarat.
- Arrange flower shows and flower arrangement shows in Ziarat.
- Facilitate farmers' access to credit in Ziarat from the development financial institutions.

- The Ziarat District Government is committed to:
 - Piloting practices such as growing flowers in plastic tunnels.
 - Raising nurseries of ornamental plants on farmlands.
 - Providing the necessary equipment, such as lathe houses.
 - Linking the produce to markets.
- Pilot new aspects of floriculture with NGOs, CBOs and the private sector in Ziarat.

Box 12: Ziarat livestock and poultry plan

Objective: Ensure that the full potential of the livestock and poultry sector is realised in Ziarat without compromising its sustainability or that of agriculture and natural resources.

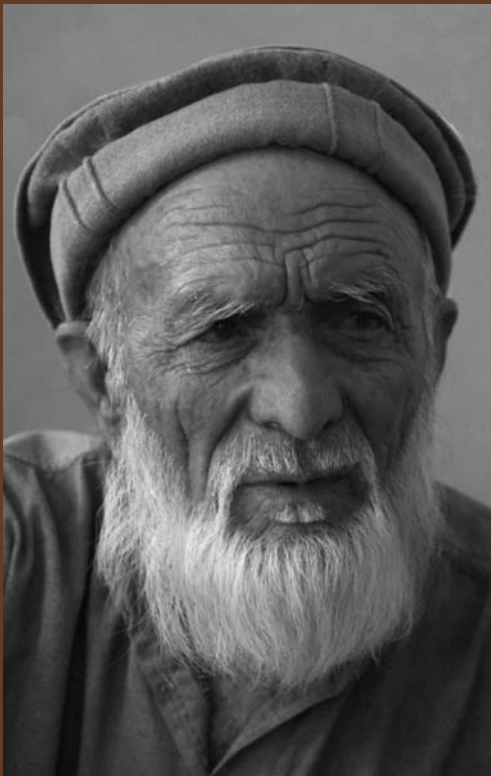
The Ziarat Livestock and Poultry Plan will include:

- Map and director of service providers and facilities in Ziarat.
- Map of livestock by grazing area in Ziarat.
- Establishment of baseline indicators and targets in Ziarat:
 - Nutrition of livestock/poultry.
 - Diseases in livestock/poultry.
 - Age of livestock/poultry.
 - Milk production.
 - Size of herds/flocks.
 - Size of herds/flocks by households.
 - Ratio of unproductive: productive livestock/poultry.
 - Price of hide: price of value added hide.
 - Livestock: forage.
 - Livestock/poultry: veterinary Hospital.
 - Livestock/poultry: vets.
 - Livestock/poultry: extension workers.
 - Household: extension workers.
 - Native: endemic livestock breeds.
 - Native: endemic fodder and feed types.
- Prepare a management plan for Ziarat focusing on feed, breed and health.
- Ensure close coordination between the Livestock, Forest and Wildlife, and Agriculture Departments for improvement of livestock and rangelands in Ziarat; pilot joint livestock and rangeland projects, interventions and activities for implementation by integrated teams.
- Disease prevention and control plan for Ziarat (hygiene at poultry farms and livestock farms, poultry management kits, training on diseases, training on hygienic slaughter practices, markets for medicines, vaccination).
- Coordinate with the Livelihood Diversification Plan for Ziarat.
- Introduce optimal breeds for Ziarat district's arid climate.
- Hold discussions with nomads and pastoralists to understand their priorities and needs in Ziarat including issue such as:
 - Large-scale movement of nomads and semi nomadic communities and their livestock, which deplete the rangelands and transmit diseases to local livestock and to forests. There is no

quarantine system applied to migrant herds or to local herds when returning (after grazing) from the *kachhi* plains.

- Difficulties in nomadic grazing due to uncertainty of forage and absence of facilities, both for the grazers and animals on and along the migratory routes, as well as dependence of grazers and animals on the co-operation of local communities.
- Vaccination and quarantine camps should be setup in Ziarat on the migratory routes of animals especially during the march-april migration through the district.
- Raise awareness of GoB plans and programmes as impacting Ziarat.
- Improve supply, management, access and knowledge of feed and fodder in Ziarat:
 - Increase high yielding grass varieties and information on grazing areas.
 - Educate and train farmers in Ziarat through livestock extension services and training programmes.
 - Organise livestock shows in Ziarat like the Sibi *mela*.
 - Increase fodder and feed production.
 - Conduct research on fodder species of trees and shrubs, their planting, yield and their nutrition etc.
 - Construct seasonal facilities for the grazers and livestock on the migratory routes in remotely located areas.
- Improve monitoring of veterinary staff and other services regarding cure and prevention in Ziarat:
 - Improve animal health care facilities.
 - Control infectious livestock diseases.
 - Provide training to farmers in treatment of livestock diseases.
- Introduce and promote dairy farming and encourage animal fattening for marketing.
- Coordinate with the NGOs/CSOs and private sector on piloting new initiatives in Ziarat:
 - Find solutions to address gaps in the present livestock marketing system.
 - Design projects and interventions for the production and marketing of silage, which has tremendous advantage as feed for animals in arid and drought-prone areas.
 - Introduce and manage high protein molasses blocks for winter feeding and drought periods.
 - Improve animal health care facilities (vaccination against infectious and communicable diseases, precautions against worms, ticks, and curative treatment including de-worming).
 - Depute veterinary assistants on the established migratory routes for vaccination and treatment, especially the treatment of infectious and communicable diseases. Find solutions for issues such as slaughtering in the open (weak monitoring, surveillance and monitoring of meat being sold, resulting in low quality or un-healthy meat being supplied to the market). There is no meat processing plant in the province.
 - Local livestock markets exist in different parts of the district. Livestock prices increase rapidly and sometimes fluctuate due to the arrival of nomads from Afghanistan with their livestock, droughts when the owners cannot afford to feed the animals, slaughtering of a large number of animals on *Eid-ul-Azha*. However, consumers do not benefit from temporary reduction in prices).

6. Poverty alleviation and livelihood diversification



It is estimated that 60 per cent of the population of Balochistan lives below the poverty line. There are several factors in favour of Ziarat District: its proximity to Quetta, the capital of Balochistan, which enables easy access to a trade and commercial hub, proximity to national and provincial political persons, to tertiary education and health services, and transport facilities. Ziarat also possesses a relatively good road network. The GoP and federally funded agencies have been developing major infrastructure in the district, especially the national highways, power and gas.

The economy of the district is largely confined to agriculture, livestock, and commerce and trade sectors. The percentage of the labour force employed in the agriculture sector was 45.9 per cent which is the most dominant sector in Ziarat district. Private enterprises and provincial governments play a significant role in the provision of agricultural inputs and services.

Diversification in the district, into new industries and addition of value-added can have a significant impact on poverty, employment and income generation, especially for women.

Given the limited data on poverty in Ziarat district proxy indicators from the MICS help to illustrate the nature of poverty In Ziarat tehsil:

- 14 per cent (10+years) were un-employed (13 per cent male, 38 per cent female), 14 per cent (15+years) were un-employed (11 per cent male, 33 per cent female), 57 per cent (10-17 years) were un-employed (57 per cent male, 83 per cent).
- Out of a sample size of 336 households, 60.8 per cent had electricity, 6.4 per cent water connection, 9.3 per cent telephone, 0.2 per cent cable TV, 0.2 per cent internet and 38.8 per cent had none of previously mentioned connection.
- 1.1 per cent households possessed air cooler or fan, 0.6 per cent refrigerator or freezer, 3.7 per cent washing machines or dryers, 76.5 per cent sewing or knitting machines, 86.7 per cent radios, 3.6 per cent televisions, 2.1 bicycles, 2.1 motor cycles or scooters, 1.06 cars or other vehicles, 0.2 per cent water pumps and 6.4 per cent did not possess any of the above mentioned assets.

6.1 Labour force

Ziarat District Government will coordinate and lobby with the provincial government on the district's priorities, particularly human resource development. Technical, professional and vocational training facilities will be strengthened, expanded or established to meet the existing and potential demand in the district and outside markets. Skills based teaching programmes that can facilitate employment will be implemented: construction material fabrication units, mining, tourism, agricultural engineering, commercial agriculture and livestock, and poultry farming.

Labour-related laws will be enforced including the: (i) Employees Social Security Ordinance 1965, (ii) Employees Old-Age Benefits Act 1976, (iii) Employment of Children Act 1991, and (iv) The Minimum Wages Ordinance 1961.

These labour laws will provide social insurance to workers.

Under the Employees Social Security Ordinance, all establishments employing more than five workers are required to register their employees and pay for their social security benefits. Similarly, all establishments employing more than 10 workers are required to register their employees for old age pension benefits. Workers are generally not registered in the district for any of these benefits.

Ziarat District Government will coordinate with the Employees Old-Age Benefits Institution (EOBI) to register these establishments and their workers. Social security provides health care facilities to all workers and their families. It also provides wages in the event of a chronic disease that requires long-term treatment, and EOBI provides pension to workers on retirement. One time registration provides coverage for life, even if the worker changes jobs.

The percentage of the employed population to the total population is 20.63 or 88.86 per cent of the labour force; of this:

- 56.69 per cent is self-employed.
- 33.24 per cent working as employees (public and private sector jobs).
- 9.40 per cent as unpaid family helpers.
- 0.67 per cent as employer.

In rural areas, the majority i.e. 58.97 per cent is self-employed followed by 19.95 and 9.22, and 9.89 per cent government employee, private employees and un-paid family helpers respectively. In urban areas only 16.25 per cent are self-employed and the majority, 72.08 and 6.25 per cent and government and private employees respectively.

According to the Population Census 1998, the labour force in Ziarat tehsil, among the population aged 10 years and above comprised 5,054 persons (96.34 per cent among males and 3.66 per cent among females), constituting 15.16 per cent of the total population. The remaining 84.84 per cent economically inactive population comprised 34.71 per cent children below 10 years age, 32.79 per cent domestic workers including 31.55 per cent housewives, 12.81 per cent



Flood protection spur in Chaoutair valley

students, and 4.53 per cent in all other categories.

The overall un-employment rate (mainly males) was about 11 per cent. The majority of the employed labour force in the district is associated with agriculture (rural areas) and trade (urban area and big villages). Of the employed population 41.16 per cent, belonged to the 'Skilled Agricultural Workers' class.

6.2 Economic opportunities and livelihood diversification

The GoP's new economic policy outline is based on the premise that partnerships between the public-private sectors will become the engine of economic and industrial growth, making workers partners in development projects.

The World Bank/Asian Development Bank's Balochistan Economic Report (2008) included priority areas, and strategies for realising the provinces' potential. Taking from these, the Ziarat District Government will focus on

supporting urbanisation, profitable enterprises, productive jobs, and creating employment links for male workers outside the district.

Keeping in line with the economic policies, Ziarat District Government will prioritise agriculture; value addition in fruits and vegetables; ecotourism; and support services in urban areas.

The business environment can be enhanced with transport, education, access to information and improved infrastructure. As part of its Livelihood Diversification Plan, Ziarat District Government is committed to the following guiding principles:

1. Develop and efficiently use those activities and physical infrastructure that are critical to the long term economic health of Ziarat;
2. Ensure decisions and actions are affordable and do not accumulate liabilities for future generations; and
3. Ensure that economic benefits and resources are adequately distributed so as to avoid inequities.

6.3 Private sector development

Recognising that the private sector is hindered by diverse factors such as high prices of utilities, administrative barriers to investment, red tape, law and order, and higher costs of inputs, Ziarat District Government will lobby with the GoB for tax exemptions and other incentives for investment. Like the rest of Pakistan, the private sector has been most successful in the transport and energy (gas cylinders marketing) sectors in Balochistan. Medium to large scale private sector investments in the mining, corporate agriculture and livestock, sanitation and waste collection sectors needs to be strengthened.

The Ziarat District Government is committed to ensuring an enabling environment for the private sector, especially for SMEs.

6.4 Communication and infrastructure

A communication infrastructure is vital for accelerating the pace of economic development e.g. farm to market roads and highways etc. The district is served by three national highways, black and shingle roads and railways. Ziarat district is linked with all other parts of the province and country by

roads. The closest airport facility is in Quetta. Rural roads, especially farm to market roads, are inadequate.

According to the Post Master General's Office, the number of post offices in Ziarat district have fluctuated between 8 and 14 between the period 2001-07 (in 2007 there were 8).

In 2007, according to the General Manager, PTCL there were six exchanges (auto 4, and 2 Wireless Loop Connections 2), 979 auto telephone connections and 348 Wireless Loop Connections in Ziarat district.

According to the Balochistan Communication and Works Department, the total road length in the district was 571 kilometer (234 kilometer black topped, 337 kilometer shingle), 609 kilometer (272 black topped, 337 shingle) and 617 kilometer (280 black topped and 337 shingle) during 2004-05, 2005-06 and 2006-07 respectively.

The access to Ziarat district is from main Quetta-Ziarat-Loralai road, Quetta-Kach levy post road, Kach-Mangi road, Ziarat-Baba Kharwari road, Khanozai-Rodmullahzai-Surghund-Loralai road, Harnai-Sanjawi road and Duki-Sanjawi road. The Quetta-Ziarat-Loralai is the most important and runs through the central parts of the district, connecting all the big settlements, and has metalled and shingle arteries. Ziarat District Government will



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Bab-e-Ziarat

lobby with GoB on the appropriate maintenance of this road is important.

6.5 Energy

An affordable and regular supply of power is crucial for basic needs such as cooking and heating; essential for adding value to and diversifying livelihoods (mechanisation of agriculture, modernisation of mining, poultry farming, ecotourism, value addition to agriculture and livestock products); and for the provision of basic social services such as education, health care and piped water.

Major sources for light are electricity, gas and kerosene oil, while major sources for fuel are firewood, animal dung, gas, Liquefied Petroleum Gas (LPG) cylinders and electricity. The use of cow dung as fuel reduces the quantity of manure which is so essential for agricultural production. The large-scale cutting and removal of vegetation for firewood has resulted in deforestation and devegetation with other alarming implications, including soil and water erosion, reduced water recharge and depleted biodiversity.

About 88 per cent of the housing units use wood/brush wood as fuel for cooking, more in urban areas ie 92.24 per cent as compared to 87.83 per cent in rural areas. According to the Ziarat District Census Report (1998), the most common type of light is electricity, which is available to 81.86 per cent of the housing units in Ziarat tehsil and to 98.28 housing units within the Ziarat MC jurisdiction; in comparison to rural areas at 81.42.

In 1998 in Ziarat tehsil, only 2.5 per cent households used LPG, 4 percent kerosene oil and remaining 5.55 per cent households used other sources. LPG was used in 1 per cent (approximately) houses in Ziarat MC as against 2.53 per cent in rural areas, while kerosene oil was used for cooking by 4.13 per cent housing units in rural areas.

The supply of piped natural gas in June 2004, at the cost Rs. 370 million, to almost all settlements in the Ziarat valley along the main road (where most of the population of Ziarat tehsil is concentrated) resulted in a huge change in the source of fuel for energy, cooking, heating and even lighting. This has reduced the pressure on Juniper forests.

Ziarat District Government will lobby for the extension of the gas pipeline and supply up to (1) Sasnamanna and Mana from Zandra, (2) Ziarat to Chautair and (3) Kach to Harnai to reduce further pressure on juniper forests.

6.6 Ecotourism

Ziarat is a beautiful and climatically pleasant summer hill station amidst a vast tract of juniper forests. Ziarat District Government is committed to designing and launching ecotourism in the following locations:

- Juniper Forests. These include the landscape carved by the juniper forests. Snowfall on the juniper trees adds to the beauty of Ziarat valley. Orchards and crops in the valleys are scenic.
- Quaid-e-Azam. Ziarat Residency in Ziarat town is an historical and national heritage building notified in 1986 under the Government of Pakistan Antiquities Act, 1975 as Quaid-e-Azam spent his last days here. Built in 1903, originally as a summer residence for the Assistant Governor General of Balochistan, the property is spread over 1,500 m². The building is made of limestone with porches and balconies made of teakwood. Restoration works at the Residency in recent years has prevented visitors from touring.
- Khalifat peak. The mountains e.g. Khalifat peak, the second highest in Balochistan, and hills are good for mountaineering and trekking for all age groups.
- Other attractive destinations include Prospect Point, Zizri Valley, Mana Valley, Chautair Valley and Tangi.
- The gentle Chashma Walk in the morning or evening is very refreshing.
- The shrine of Baba Kharwari is a sacred religious places visited by a large number of visitors.

The district has inadequate tourist facilities, which is one of the reasons behind the low number of tourists. There are a few hotels and restaurants in Ziarat district, but none of them are likely to attract Pakistani or foreign tourists.

Box 13: Ziarat livelihood diversification plan

Objective: Ensure diversification of livelihoods and introduction of employment opportunities in Ziarat that lead to greater income and asset creation.

The Ziarat Livelihood Diversification Plan will include:

- Map of markets, commercial outlets, and small and medium enterprises.
- Map demarcating potential new enterprises (ecotourism) or the re-location of existing enterprises (e.g. naswar units).
- Directory of market associations and credit facilities.
- Directory of provincial and federal training institutes, and private sector training institutes.
- Data on the number of current jobs by nature and sector.
- Data on unemployment, employment and number of vacancies.
- Data on sectors where employment gaps can be exploited (these may include a sector such as ecotourism with a range of options for the short term e.g. camping sites or cherry picking, medium term such as SME feasibilities and long term e.g. development of rock climbing training school).
- Establish a monitoring and evaluation system for Ziarat:
 - Targets for employment (including for phasing out child labour).
 - Targets for employment diversification.
- Establishment of bazaar association/s in Ziarat:
 - Developing a district level market for fruits, vegetables, livestock and their products.
 - Job creation opportunities.
 - Introduce new products (for e.g. floriculture, ecotourism).
 - Market Information.
 - Link between producers and retailers and customers.
 - Systems for managing cleanliness in markets.
 - Promote information technology application.
 - Make available credit facilities.
- Nurturing SMEs and skill development in Ziarat. Support programme for sustainable alternative livelihood both for men and women in (credit providing agencies, feasibilities, links with the Small and Medium Enterprise Development Authority, BRSP, Export Promotion Bureau economic incentives, training, alternative energy sources) ensuring that impact on environment is assessed and mitigated:
 - Tourism. Maintenance and use of natural/archaeological/historical sites with proper guides and information. Offer packages for archaeological, cultural and natural site tours. These cultural assets and other tourism resources shall be preserved, interpreted and promoted for tourism:
 - Interpretation and promotion of tourism assets.

- Facilitating No Objection Certificates for visits.
- Selecting and training individuals as guides and linking them with national and international companies.
- Prioritising community-based tourism.
- Alternative energy (heating stoves, solar powered water heaters etc). Wind data and feasibility studies for Ziarat for energy development in remote rural areas through different types of alternate energy such as biogas, solar panels, solar thermal and wind.
 - Exploiting minerals. Marble preparing units. Chromite products.
 - Poultry farming and livestock.
 - Low grade food uses.
 - Repair of household equipment.
 - Machinery maintenance and repair.
 - Installation and maintenance of high efficiency irrigation systems.
 - Handicrafts including woollen carpets, rugs and other woollen articles; wood work, knitting, sewing.
 - Cultivation of MAPs.
 - Cold storage, fruit grading and packing, and preparation of preserves.
- Strategy to encourage vocational education in Ziarat. (Organise technical training of the labour force keeping in mind the local, provincial, national and foreign market requirements. Offer training in technical centres and vocational training institutes in Ziarat as well as in more developed areas of the province such as Quetta and Hub; encourage, catalyse and facilitate opening of standard vocational education institutions and technical training centres in the public and the private sectors).
 - Target for value addition in Ziarat for traditional economic activities, with a special focus on activities for which women bear the burden of responsibility (e.g. livestock).
- Pilots with NGOs/CSOs and the private sector.
- Ziarat District Government will lobby with the GoB to:
 - Establish an industrial estate; district market for fruits; establish a special fruits and flowers facility at Quetta airport.
 - Improve law and order.
 - Design an economic plan that takes into account dwindling water resources and degraded rangelands; create economic incentives for technology intensive and environmentally friendly investments; and create an adaptation plan for water intensive industries.
 - Provide alternatives to child labour.
 - Improve the capacity in the provincial government for promoting tourism in the province.
 - Request Pakistan Tourism Development Corporation to conduct a comprehensive survey of the potential tourist attractions in Ziarat and develop a plan (including for the private sector and community tourism).

- Preserve cultural properties and natural areas for promoting their use for tourism. Encourage the private sector to develop tourist facilities including lodges and eating-places.
- Improve the marketing system including exclusion of intermediaries through enactment and enforcement of law; create legal links between Ziarat and foreign markets.
- Improve farm to market roads in Ziarat.
- Encourage and support the private sector to establish a cold storage in Ziarat.
- Improve gender inequity in employment.

Division of labour by gender in livestock sector

Exclusively Men	Exclusively Women	Shared Tasks
Marketing	Milking and feeding	Fodder collection
Breeding	Processing by-products	Decision-making
Slaughtering	Fodder management	Type/number of animals to buy or sell
Purchasing and transportation	Caring of sick livestock	Birthing
Medicines	Hand suckling of young	
Field grazing	Processing local herbal medicines	
	Dung management	

Box 14: Strategy for mines and minerals in Ziarat

Lobby and work with GoB in order to:

- Tap mines and minerals in a sustainable and environmentally friendly way to improve income and diversify livelihoods in Ziarat; use mines and minerals to support ecotourism (e.g. abandoned sights) in Ziarat.
- Complete the geological survey in Ziarat especially of mineral rich areas with modern equipment and techniques; prepare feasibility reports; arrest the practice of gross under reporting of production of minerals.
- Most of the minerals from Ziarat are exported in raw form with no value addition, limiting employment and income generation opportunities. Measures will be taken to develop this area.
- Introduce technology for improving efficiency and quality of extracted materials, initially of celestite and fluorite and then other minerals from Ziarat.
- Attract national and foreign investors to Ziarat.
- Promote large scale commercial mining in Ziarat.
- Improve marketing and trade networks in Ziarat. Often mine owners do not get a fair price due to distantly located markets.
- Introduce Ziarat specific targets and identify indicators to monitor them.
- Introduce a comprehensive training package in Ziarat for workers (and potential workers) and local entrepreneurs in the mining sector:
 - Organise training for mine workers particularly on occupational health and safety issues.
 - Improve workers' safety and occupational health conditions in mines.
 - Take measures to effectively address social security needs of workers.
 - Phase out the consumption of traditional mining methods which are inefficient and wasteful.
 - Minimise damage to animal life, landscape, and soil erosion, silting of streams which could occur from untreated mines.
 - Manage air and noise pollution.
- Lobby for the establishment of the Mineral Investment Facilitation Authority.
- Disseminate research and other information on mines and minerals in Ziarat.
- Computerise records; engage proactively with the private sector (retailers, value addition industries, mining etc) as relevant to Ziarat.
- Implement the recommendations in the National Mineral Policy (1995).
- Introduce a Geographic Information System at the Directorate General of Mines and in Quetta as relevant to Ziarat.
- Monitor production and increase royalty by improving the auction system.
- Conduct environmental monitoring of the mining areas and operations in Ziarat.
- Issue guidelines to the mining industry in Ziarat to effectively manage their waste.
- Improved transparency in decisions related to concessions and leases issued for mines etc in Ziarat.

Box 15: Ziarat energy plan

Adequate and regular supply of energy is crucial for livelihoods including mechanisation of agriculture, poultry farming, ecotourism, value addition to agriculture and livestock products, water and sanitation, efficient running of health facilities and educational institutions, and the conservation of the juniper forests in Ziarat.

In Ziarat, major sources for light are electricity, gas and kerosene oil while major sources for fuel are firewood, animal dung and gas. The use of cow dung as fuel reduces the quantity of manure, essential for agricultural production. The large scale cutting and removal of vegetation for firewood is resulting in deforestation and devegetation in Ziarat with several other implications including soil and water erosion and reduced water recharge and biodiversity. Major issues faced in Ziarat are:

- Load shedding of electricity.
- Inflation and high price of energy which limits the volume of trade.
- Agricultural tube wells consume and waste electricity as it is not priced. Moreover, due to fluctuations there is a tendency to overuse electricity when electricity is available leading also to greater wastage of water.
- Limited availability and high cost of LPG cylinders.
- Inefficient use and wastage of electricity and gas.

The Energy Plan for Ziarat will include a long-term environmental and economic perspective and appropriate energy goals:

- Conserve energy with efficient use and reducing transmission losses.
- Extend and expand the supply of natural gas to the other big settlements in Ziarat.
- Promote the use of coal briquettes for cooking and heating in areas where supply of natural gas will take considerable time and effort (available in Harnai and Quetta).
- Promote, with subsidy, alternate energy development including off-grid solar photovoltaic, wind energy for rural electrification; solar thermal for heavy load, especially for dispersed application; and biogas for cooking and heating.
- Introduce metering of electric-run tube wells and adopt a slab tariff on the power consumed. Alternately, shift the subsidy on power supply to tube wells, to the procurement and use of efficient irrigation systems e.g. to the use of high efficiency irrigation systems e.g. bubbler, drip and sprinkler, land levelling, water management, rain water harvesting and spate irrigation etc.
- Promote efficient use of energy (tuning of vehicles, tube wells, efficient cooking stoves, energy saver bulbs etc.)
- Promote the use of, and arrange, the regular supply of LPG cylinders. Encourage private sector investment to establish LPG decanting units.
- Extend the supply of natural gas in Ziarat to big villages at short distances from the existing gas pipeline.
- Increase the number of CNG stations and the use of CNG for vehicles in Ziarat.
- Improve electricity transmission lines in to Ziarat to reduce line losses.

7. Implementation



The Ziarat District Government has initiated the implementation of recommendations and measures in the IDDV. The Ziarat IDDV will be treated as a living document.

The Ziarat District Government will be responsible for reviewing and updating the document and the implementation process. An officer will be assigned this task.

The IDDV is an important planning tool, serving not only as a road map for sustainable development but also as a symbol of political commitment and a reflection of the will of the people.

Figure 4: Phases in visioning and planning



Step One
IDDV



Step Two
Detailed sector
specific plans



Step Three
District plan
with budget

In the absence of democratic representation at the district level the IDDV can still in part ensure effective, efficient and equitable public sector services.

Monitoring and evaluation enables course correcting of strategic directions and regulating service delivery. For this purpose it needs to address the following:

1. Is the IDVV an effective tool?
2. Are services efficient?
3. Are services equitable?
4. Are targets likely to be achieved?

A simple three-step approach will be used for implementing the IDDV.

- ❖ **Step One:** preparing sector wise action plans based on livelihood diversification, social sector, natural resource plan, agriculture and livestock, and M&E. Strategies for gender, landuse, energy, mines and minerals, disaster mitigation and preparedness, and culture and recreation. The Ziarat District Government will coordinate and prepare these plans/strategies jointly with appropriate line departments and directorates on a simple template. This will include the following:
 - a. Baseline data;
 - b. Sector specific indicators and targets;
 - c. Mapping available resources;
 - d. Priority reform areas for policies, Rules, Regulations and procedures;
 - e. Priority investment areas including human resources, systems, management and infrastructure;
 - f. Financial implications of above; and
 - g. Tasks spelt out in terms of short, medium and long term (following government budgetary cycle).
- ❖ **Step Two:** Merge plans to arrive at a detailed district strategy and budget.
- ❖ **Step Three:** Align finances and allocations to strategy and budget.

During implementation, the objective of the IDDV to plan, change, promote, support and monitor sustainable development in Ziarat district will remain its guiding principle.

To achieve the immediate short-term targets of the IDDV the Ziarat District Government will:

1. Create an enabling environment for:
 - Urbanisation and increasing population density; and
 - Institutions, communities, the private sector, civil society organisations, academia and the media to participate fully in the development process.
2. Strengthen:
 - The natural resource base, curbing and where possible reversing degradation, and promoting sustainable development.
3. Develop and promote:
 - Alternative and sustainable livelihoods aimed at poverty reduction, while at the same time reducing the degradation of natural resources; and
 - Focus on the agricultural and mining industries. Work with fruit and vegetable farmers to see how their income can be increased. Explore other new value added sectors.
4. Create capacity by:
 - Establishing linkages with training and education facilities at the provincial and national level to develop human resources;
 - Opening new marketing and information dissemination channels; and
 - Learning from the experiences of community-based initiatives elsewhere in the country.
5. Mainstream:
 - Gender concerns and eliminate gender disparities. Adapt to social changes in society, particularly brought in by globalisation, while preserving positive cultural values, norms and traditions;
 - Equity and the needs of the poor and vulnerable;
 - Climate change;
 - Public participation in planning of GoB's programmes and projects; and
 - Transparency and dissemination of information.



A nursery established by IUCN

There is a significant variance between provincial allocations and district priorities but also intra-sectoral allocations are highly inequitable.

Ziarat district is committed to prioritising O&M over capital expenditure and to ensure that services are financially feasible.

Donors can be approached to support the programmes, projects and priorities of the IDDV since these constitute the home-grown agenda, which has been developed through a wide consultative process. Donors and international agencies, which have been supporting programmes and projects in Balochistan include UNDP, ADB, WB, EKN, USAID, Global Environment Facility, EU, UNICEF, JICA, Kuwait Fund, CIDA, DFID, FAO, IUCN, WWF. They maybe interested in funding parts of the IDDV.

The Ziarat District Government is going to work with the GoB proactively on the following priority areas:

- Data and information;
- Accuracy of data pertaining to the district;
- Ensuring accuracy of the Population Census; and
- Ensuring accuracy of the district/map.

Ziarat District Government will lobby for maps that represent the exact area of the district, (tehsil-wise and mauza-wise) and will lobby for their notification in the gazette and dissemination to relevant agencies for planning:

1. Improve law and order and reduce insecurity and threat to life and assets:
 - a. Work on compliance and enforcement of law;
 - b. Ensure security of schools; and
 - c. Arrest the erosion of harmony among ethnic groups.
2. Build a human resource system that is:
 - a. Performance based;
 - b. Curbs absenteeism of public sector staff;
 - c. Reduces vacant posts in the public sector;
 - d. Extends duration of posting; and
 - e. Enforces sanctions and penalties.
3. Formulate a capacity building plan which includes:
 - a. Development and training of Ziarat District Government staff;

- b. Raising awareness on gender, climate change, poverty; and
 - c. Introduce internet, emails and digital/ electronic systems in the district government.
- 4. Introduce a comprehensive regulation and monitoring system:
 - a. Enforce Rules, Regulations and procedures;
 - b. Simplify bureaucratic procedures at the district level;
 - c. Address corruption and negligence (including shifting the balance of allocations away from capital expenditure to O&M);
 - d. Pilot a Citizen Police Liaison Committee; and
 - e. Establish a Public Grievance Redressal System.
- 5. Support the disaster mitigation and preparedness strategy:
 - a. Negotiate incentives for the implementation of the provincial disaster risk management plan;
 - b. Hold disaster management and seismic briefings/trainings;
 - c. Establish a system of preparedness for reducing losses;
 - k. Agree on an emergency drinking water plan for citizens and livestock;
- m. Collate and disseminate reliable data on temperature, precipitation, run-off, recharge, soil moisture and ground water in order to determine the impact and intensity of drought; and
 - o. Establish a drought emergency fund at the provincial and national levels.
- 6. Support the district in mainstreaming gender, poverty and climate change:
 - a. Conduct a malnourishment analysis of women, children, disabled and other vulnerable groups;
 - b. Review laws that are systematically violated (inheritance law, including trading of women under the *jirga* system etc);
 - c. Raise awareness on laws related to women's rights e.g. The Protection against Harassment of Women at Workplace Bill 2010 and the Prevention of Domestic Violence Act 2008;
 - d. Work with the federal government and GoB on the empowering women especially through the Benazir Income Support Program; and
 - e. Provide incentive for female teachers and female doctors to work.
- 7. Support the district education plan by prioritising:
 - a. Training of teachers; introducing incentives for further studies;

Figure 5: Ensuring transparency

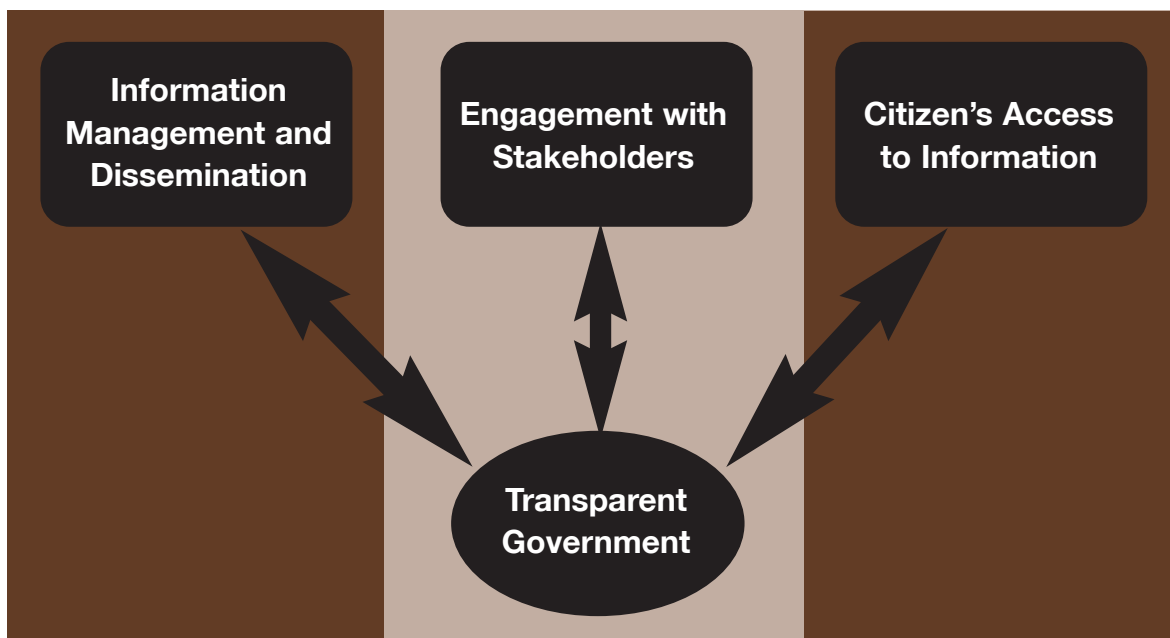
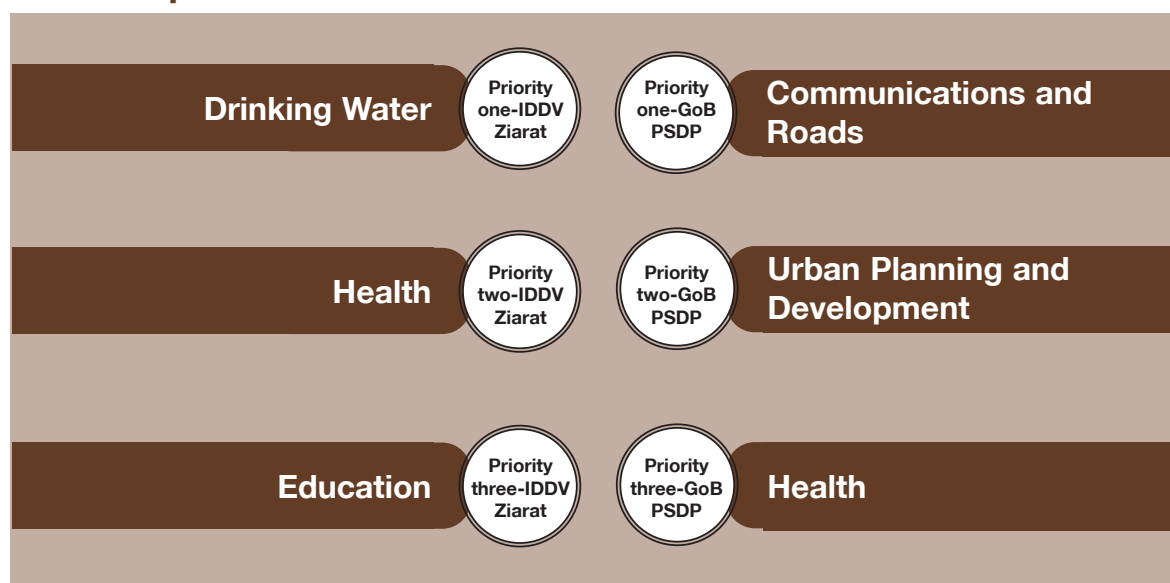


Figure 6: Mismatch between priorities in Ziarat district and provincial allocations



- encouraging teachers to compete for federal government managed scholarships and training opportunities; provide transport and accommodation to teachers for remote areas; review eligibility criteria for teachers (in particular relaxing the age limit for teachers);
 - b. Increase non-salary allocation of operational expenses; increase allocations for travel for monitoring staff;
 - c. Improve infrastructure in functional schools and health facilities; upgrade single teacher schools into multi teacher schools;
 - d. Introduce the subject of governance, sustainable development, environment and gender; and
 - e. Build a Women's Degree College.
8. Support the district health plan:
- a. Arrest communicable diseases, particularly managing the transmission of diseases across the porous Pakistan-Afghanistan border; and
 - b. Improve capacity of health department staff particularly for preventive health care and mental health.
9. Support the district water and sanitation plan by:
- a. Ensure investments are made as per a strategic plan; and
 - b. Prioritise O&M expenditure.
10. Support the district natural resource management plan:
- a. Phase out the subsidised flat rate of electricity for tube wells;
 - b. Subsidise farmers practicing rain-fed farming and those using diesel pumps;
 - c. Incentivise groundwater recharge by adopting water conservation interventions;
 - d. Shift the subsidy on power supply to tube wells, to the procurement and application of efficient intensive irrigation systems;
 - e. Expand the management plans of protected areas, and the re-introduction plans of species that have been endangered and wiped out;
 - f. Strengthen GoBs staff in the districts in the following areas: conducting scientific surveys and studies, wildlife and wetland inventory, resource planning, management and assessment for in-situ conservation and sustainable employment of protected areas and species, communication and awareness raising, social mobilisation and community

- participation, and programme and project planning;
 - g. Collaborate to ensure the compliance and enforcement of wildlife, forest and environmental laws; and
 - h. Seek support to raise awareness on the current and potential social, economic, environmental and cultural value of biodiversity, wildlife and protected areas (the low provincial funding, due to low political will and consequent low priority for wildlife, has remained a significant constraint).
11. Support the implementation of the district agriculture and livestock plan:
- a. Coordinate between Livestock, Rangelands and Forest Department for new programmes and projects;
 - b. Coordinate with the Provincial Disaster Management Authority for information on climate change, particularly droughts; and
 - c. Assess the health of livestock and poultry in the district including nutrition/low feed due to over grazing.
12. Support the district livelihood diversification plan:
- a. Identify openings by sectors and skill sets, with a special focus on women and the poor;
 - b. Create incentives for the private sector to provide technical education including for women;
 - c. Develop Ziarat as a satellite of Quetta with strong commercial and trade links;
 - d. Improve economic competitiveness by reducing cost and reliability of energy;
 - e. Lobby with the Quetta Electricity Supply Corporation to improve electricity;
 - f. Promote, pilot, demonstrate and subsidise alternative energy sources;
 - g. Promote efficient application of energy;
 - h. Promote the use and supply of LPG cylinders; and
 - i. Promote CNG stations for vehicles.
13. Lobby for a greater share from the provincial financial pool.

Box 16: Ziarat M&E plan

The Ziarat M&E Plan will include:

- Baseline indicators for all sectors.
- Indicators to measure the effectiveness of the IDDV.
- Monitoring progress with the implementation of the IDDV.
- Qualitative and quantitative data.
- Documenting and dissemination good practices and lessons learnt.
- Pilots with NGOs or CBOs and the private sector e.g. participatory monitoring.

Box 17: Ziarat culture and recreation strategy

Sports and social activities, especially youth related activities include cricket, football, volleyball, wrestling, cycle and motorbike racing, singing and dancing. The middle aged and elderly enjoy folk dancing. *Eid-ul-Fitar* and *Eid-ul-Azha* are celebrated as the main festivities of religious and cultural importance. Currently, there is very little in terms of sports facilities or other healthy cultural activities. Women have negligible opportunities for recreation outside of their homes.

The goals of the cultural strategy for Ziarat include preserving, developing, promoting and using the cultural assets such as folklore, songs, music, handicrafts, *urs*, *melas*, sports, food, etc.; establishing and connecting local arts and cultural organisations to the public across Ziarat, province and country. This will also promote economic development. The strategy will:

- Develop facilities and promote cultural activities to make the district enjoyable to local people and tourists.
- Establish a Ziarat Museum to display all aspects of the culture and history of Ziarat.
- Launch domestic tourism efforts gradually, expanding it in time to foreign tourism.
- Traditional handicrafts such as embroidered *kameez* and *shalwar* of children and women, on caps, on bed and pillow covers, etc. sheep wool sweaters can be marketed. The Social Welfare Department initiated a training programme for women to improve and popularise traditional handicrafts. International donors have provided some financial assistance through local NGOs for training women in marketing of handicrafts. This should be supported in the future.

Annexes



Annex 1: Data tables

Education

Table-1. Section and sex wise schools/colleges/staff and enrolment in Ziarat district, 207-08

School Category	Govt. Schools		Teachers	Section	Sex	No.
In Primary Schools	Male	366	565	Primary	Male	12359
	Female	125	193		Female	8428
In Middle Schools	Male	33	Male 378	Primary	Male	3982
					Female	2176
	Female	11	Female 130	Middle	Male	1181
					Female	664
In High Schools	Male	18	Male 395	Primary	Male	3592
					Female	1312
				Middle	Male	2245
					Female	744
	Female	4	Female 95	High	Male	1710
					Female	160
In Intermediate College	Male	1	Male 16			
	Female	1	Female 10			

Source: BEMIS, 2008

Table-2. Trend of enrolment of boys and girls in Ziarat district 2008-09

	Boys	Girls
Kachi	2,193	1,694
Pakki	1,262	845
2	1,059	659
3	965	568
4	765	405
5	682	321
6	630	204
7	505	172
8	417	129
9	371	78
10	340	51

Source: BEMIS, 2008-09

Table-3. Status of primary education in Ziarat district in the context of MDG-2

Net enrolment ratio in primary education (m)	51
Net enrolment ratio in primary education (f)	31
Net enrolment in primary education (total)	42
Gross Primary Enrolment rate (m)	104
Gross Primary Enrolment rate (f)	52
Gross Primary Enrolment rate (total)	80
Net Secondary Enrolment rate (m)	31
Net Secondary Enrolment rate (f)	16
Net Secondary Enrolment rate (total)	23
Literacy Rate 10 years+ (m)	34
Literacy Rate 10 years+ (f)	8
Literacy Rate 10 years+ (total)	22
Literacy rate of 15-24 year olds (m)	51
Literacy rate of 15-24 year olds (f)	13
Literacy rate of 15-24 year olds (total)	35

Source: BEMIS, 2008-09

Health

Table-4. Priority diseases in Ziarat district, 2008

Health Problems (Priority Diseases)	Cases Under 5				Cases 5 and Over	Total	
	Under 1	1 to 4	Total	% of Total NC<5		Cases	% of Total NC
Diarrhoea	797	2571	3368	15.60%	3840	7208	6.40%
Dysentery	501	1340	1841	8.50%	3869	5710	5.10%
Acute Respiratory Infections	1882	5669	7551	35.00%	21723	2927	26.00%
Fever (Clinical Malaria)	221	718	939	4.30%	4301	5240	4.70%
Cough more than 2 weeks	2	32	34	0.20%	189	223	0.20%
Suspected Cholera	0	0	0	0.00%	2	2	0.00%
Measles	0	1	1	0.00%	0	1	0.00%
Goitre	0	0	0	0.00%	1	1	0.00%
Dog bite	0	0	0	0.00%	11	11	0.00%
Scabies	0	2	2	0.00%	12	14	0.00%
Total New Cases Priority Diseases	3403	10333	13736	63.60%	33948	47684	42.30%
Total New Cases (All Diseases)	5775	15816	21591		91021	112612	

Source: BHMIS, 2008

Table-5. Expanded programme on immunization in 2007 in Ziarat district

Vaccine	Children (0-11) Months	Children (12-23) Month	Vaccine	Pregnant Woman	CBA Ladies
BCG	52	20	T-T-1	12	1.7
OPV/DPT-3	50	24	T-T-2	7	13
Measles	39	19	T-T-3	3	
			T-T (+)		0.6

Source: EPI, 2007

Table-6. Status regarding MDG-5 and MDG-6 in Ziarat teshil

Goal 5: Improve maternal health		Goal 6: Combat HIV / AIDS, malaria and other diseases	
Maternal Mortality Ratio per 100,000 births		Contraceptive Prevalence (any)	15
Proportion of births attended by skilled health personnel	6	Contraceptive Prevalence (modern)	3
Coverage of Pre-natal care (by any health worker)	35	Aware of HIV/AIDS	4
Population covered by LHW's	10	Prevalence of TB (/100,000)	321

Source: MICS, 2004

Table-7. 1998 and projected population in Ziarat district

Year	Ziarat	Sanjawi	Total	%age increase
1998	33,340	47,408	80,748	-
2001	36,000	51,190.4	87,190	7.978404
2004	39,000	55,456.27	94,456	16.9766
2011	45,000	63,988	108,988	34.97301
2021	55,000	78,207.56	133,208	64.96701

Source: NIPS, 2010

Table-8. Population of Ziarat district by sex, sex ratio density, urban portion, household size and annual growth rate

Admn - Unit		Ziarat Sub-Division	Sanjawi Sub Division	Ziarat District
Area (Sq. Km.)		1,489	2,181	3,670
Population 1998	Both Sexes	33,340	47,408	80,748
	Male	17,304	24,659	41,963
	Female	16,036	22,749	38,785
	Sex Ratio	107.9	108.4	108.2
	Population Density Per Km ² .	22.4	21.74	22.00
	Urban Population (percentage)	1.9	-	-
	Average H. Hold Size	7.4	6.7	7.05
Population 1981		32,196	30,983	63,179
1981- 98 Average Annual Growth Rate (percentage)		0.21	2.53	1.37
Projected Pop: 2011				45,000

Source: District Census Report, 1998; NIPS, 2010

Table-9. Gender inequality

Ratio females/males: Net enrolment ratio in primary education	0.61
Ratio females/males: Gross enrolment ratio in primary education	0.5
Ratio females/males: Net enrolment ratio in secondary education	0.5
Ratio of literate females to males among 10+ years	0.22
Ratio of literate females to males among 15-24 year olds	0.25
Women in wage employment (non-agricultural) - % female to total	0.01

Source: MICS, 2004

Table-10. Status of poverty in Ziarat tehsil in context of MDG-8

Unemployment rate of 15-24 year olds (m)	25.9
Unemployment rate of 15-24 year olds (f)	46.7
Unemployment rate of 15-24 year olds (total)	26.5

Source: MICS, 2004

Table-11. Number of rural localities by population size and their population by sex in Ziarat tehsil

Rural Localities by Population Size	Number of Rural Localities	Population		
		Both Sexes	Male	Female
Total	29	32,704	16,889	15,815
5,000 and above	2	12,706	6,529	6,177
2,000-4,999	1	4,103	2,078	2,025
1,000-1,999	7	10,906	5,600	5,306
500-999	5	4,002	2,152	1,850
200-499	1	376	200	176
Less than 200	8	611	330	281
Un-inhabited	5	-	-	-

Source: District Census Report, 1998; NIPS, 2010

Housing and settlement

Table-12. Housing units by tenure, material used in outer walls and roofs in Ziarat tehsil

Construction Material used In	Housing Units by Tenure			Housing Units	
	Owned	Rented	Rent-free	Total	Percent
Outer Walls					
Baked Bricks / Blocks / Stones	589	18	89	696	15.46
Unbaked Bricks / Earth Bound	3,213	16	167	3,396	75.42
Wood	232	9	31	272	6.04
Others	81	9	49	139	3.09
Roofs					
Rcc / Rbc	89	3	6	98	2.18
Cement / Iron Sheets	630	16	92	738	16.39
Wood	3,242	20	185	3,447	76.55
Others	154	13	53	220	4.89
Total	4,115	52	336	4,503	100
Percent	91.38	1.15	7.46	100	

Source: District Census Report, 1998

Water

Table-13. Water supply scheme in Ziarat district, 2009

Rural Localities by Population Size	Number of Rural Localities	Population		
		Both Sexes	Male	Female
Total	29	32,704	16,889	15,815
5,000 and above	2	12,706	6,529	6,177
2,000-4,999	1	4,103	2,078	2,025
1,000-1,999	7	10,906	5,600	5,306
500-999	5	4,002	2,152	1,850
200-499	1	376	200	176
Less than 200	8	611	330	281
Un-inhabited	5	-	-	-

Source: District Census Report, 1998; NIPS, 2010

Table-14. Drinking water quality of “public water supply tank” in Ziarat town

S.No.	Parameter	Unit	NEQs	Result
1	pH	6.5-8.5	7.5
2	E.C	us/cm	1000	910
3	D.O	mg/L	6-7	5.4
4	Taste	Non Objectionable	Non Objectionable
5	Odour	Non Objectionable	Non Objectionable
6	Temperature	C	40=>3	28
7	Turbidity	NTU	5	7
8	Total dissolved solids/salinity	mg/L	3500	2500
9	Salinity	‰		0.3

Source: BEPA – Environmental Mentoring Laboratory, Quetta, 2nd August 2008

Table-15. Water filtration plants installed under clean drinking water initiatives (CDWI) project, 2005-06 and 2007-2010

Tehsil	Sr. No.	Phase I (Tehsil Level- 2005-06)	Phase II (Union Councils level - 2007 – 2010)
		Locations	Locations in UCs
Ziarat	1	National Bank Park on Quetta Road near to DCO Office Ziarat City	Near DCO House Ziarat Town
	2		Zandra stoc
	3		Kawas pum
	4		Kuch stop(Kan Depo)
	5		Ghoski
Sanjawi	6	Municipal Park adjacent to UBL and Police Station near TMA Office main Bazar Sanjawi	Anderabad
	7		Chotair rest house
	8		Baghow stoc
	9		Poi bazaar
	10		Regorah cross

Source: Deputy Project Director, Clean Drinking Water for All Project, Ministry of Special Initiatives, Islamabad (date not specified)

Table-16. Environmental sustainability in context of MDG-7 in Ziarat district

Proportion of population with sustainable access to an improved water source (U/R) - within 2 km or 1/2 hour away (RT)	26
Urban/Rural population with access to improved sanitation	7

Source: MICS, 2004

Table-17. Geographical area of Ziarat district, 2007-08

	Geographical Area	Reported Area	Unreported Area	Discrepancies
Ziarat tehsil	1,489 km ²			
Sanjawi tehsil	2,181 km ²			
Total	3,670 km ²			
	330,100 ha ¹	85,837 ha	244268 ha	36900 ha ²

Source: Development Statistics of Balochistan, 2007-2008

Table-18. Cultivated and uncultivated area in Ziarat district

Cultivated Area				Non Cultivated Area			
Net Sown Area	Double Cropped	Current Fallow	Total	Forests	NA for Cultivation	Cultivable Area	Total
3,038	15	2,420	5,473	69,357	8,460	2,557	80,374
According to Forest Department (2010) the legally designated area is 78,792 ha							

Source: Development Statistics of Balochistan, 2007-2008; Forest Department, 2010; Survey of Pakistan Map – First Edition, 2004

Forests

Table-19. Forests in Ziarat district

No.	Forest	Legal Status/ Notification	Area (Acres)	Rights Admitted	Remarks in Notification
1.	Ziarat juniperForest S.F.	State Forest No. 66-Dev/II/52. Dated <i>the 13th Feb.</i> 1954	92,000 acres (This include 14,415 acres of already notified State Forest)	The Sarangzai and Panezais shall continue to enjoy the following privileges: - i. Grazing over not less than half of the gross area. ii. Removal of dead fallen wood for bonafide domestic use. iii. Removal of wood for agricultural implements for bonafide personal use. iv. Access to and use of all sources of water. v. Right of way along existing footpaths when moving from winter to summer residence and vice versa. vi. Cultivation over the existing fields and their extension. vii. First choice of labour and contracts within this areas.	
2.	Sasnamana S.F.	State Forest/ No. 66-Dev/II/52. <i>the 13th February</i> 1954	16,320 acres	The Sarangzai shall continue to enjoy the following privileges: - i. Grazing over not less than half of the gross area; ii. Removal of dead fallen wood for bonafide domestic use. iii. Removal of wood for agricultural implements for bonafide personal use. iv. Access to and use of all sources of water. v. Right of way along existing footpaths when moving from winter to summer residence and vice versa. vi. Cultivation over the existing fields and their extension. First choice of labour and contracts within this areas.	
3.	Khware Churman S.F.	State Forest/ No. 1175/Fst. the 31st March 1951	7,000 acres	i. Rights of grazing by rotation to the bonafide residents of the vicinity. Rotation and area to be closed at any one time to follow the prescription of the grazing scheme to be chalked out by Divisional Forest Officer, Loralai. ii. Right of Forest Guards posts to Malik Jan Mohd. Khan Tarin. iii. Prior right to bonafide residents of the vicinity in allocation of contracts of works in the area	
4.	Sanjawi juniperS.F.	State Forest/	56.88 sq. miles (This excludes 8.62 sq. miles of existing State Forests).	The Vanechi tribe residing there shall enjoy the following privileges ● Grazing over not less than half the gross area. ● Removal of dead fallen wood for bonafide domestic use.	

No.	Forest	Legal Status/ Notification	Area (Acres)	Rights Admitted	Remarks in Notification
			Total 65.5 sq. miles.	<ul style="list-style-type: none"> ● Removal of wood for agricultural implements for bonafide personal use. ● Access to and use of source of water in accordance with the grazing pattern. ● Rights of way along existing routes during seasonal migrations. ● Cultivation over existing fields and their extension. ● Residence in existing hamlets. ● First choice of labour and contracts within this area. <p>No non-right holders will enjoy any privileges in this forest.</p>	
5.	Batsirgi S.F.	State Forest/ No.4116. dated <i>the 6th October 1904.</i>	7,680 acres or 12 Sq. mile	Sarangzai who have lands have the right to pasture their Herds up to the specified number	
6.	Tomagh S.F.	State Forest/ No.5213. <i>Dated the 6th Nov. 1906.</i>	10,240 acres		
7.	Sasnamana S.F.	State Forest/ No.66- Dev./II/52. <i>the 13th February 1954.</i>	16320 acres	<p>The Sarangzai shall continue to enjoy the following usages: -</p> <ul style="list-style-type: none"> ● Grazing over not less than half of the gross areas. ● Removal of dead fallen wood for bona- fide bonafide domestic use. ● Removal of wood for agricultural implements and grazing hutments for bonafide personal use. ● Access to use of all sources of water. ● Right of way along existing footpath when moving from winter to summer residence and vice versa. ● Cultivation over the existing fields and their extension. ● First choice of labour and contracts within this area. 	
8.	Chautair S.F.	State Forest/ No. 5776 dated 22nd October 1890, effective from Nov. 15, 1890.	1,920 acres		On both sides of the hill south of Chautair village
9.	Karbi Kach S.F.	State Forest/ No. 5781 dated 22nd October 1890	2,160 acres		Reserved with effect from 15th November 1890, demarcated with stone pillars in 1890

No.	Forest	Legal Status/ Notification	Area (Acres)	Rights Admitted	Remarks in Notification
10.	Zargat S.F.	State forest No. 5781 dated 22nd October 1890. Reserved with effect from 15th Nov. 1890.	2,760 acres		<ul style="list-style-type: none"> Demarcated in 1887, a portion on both sides of Ganju Gat added in 1890 and pillars altered and completed.
11.	Shaidan S.F.	State Forest/ No. 5781 dated . 22nd October 1890	2,520 acres		<ul style="list-style-type: none"> Notification effective from 15th Nov. Demarcated by dry stone pillars in 1890
12.	Pil S.F.	No. 5781 dated 22nd October 1890. <ul style="list-style-type: none"> Notification effective from 5th Nov. 1890. 	1,280 acres	<ul style="list-style-type: none"> A right of way from The Wam Village to the cultivation above A 100' wide road has been opened for the passage of cattle belonging to the Panezais of Dirgi and the neighbouring villages 	<ul style="list-style-type: none"> Demarcated by stone pillars
13.	Gohar S.F.	State Forest/. No.53-FC dated 30th Dec. 1893, effective from 1st April 1894.	1,500 acres	Public rights of way	Includes all catchments area of water supply of Ziarat Station and the hill over which the station is situated.
14.	Kach Mangi S.F.	State Forest/ No. 1770 dated 21st March 1894.	9,400 acres	One third of the area in rotation, to be always available for purpose of 161 cows and bullocks, 3,062 goats and sheep and 4 donkeys. The property of 56 individual right holders.	
15.	Wam Tangi S.F.	State Forest/ No. 5781. dated 22nd October 1890.	1,233 acres		
16.	Khumak SF	State Forest / 6033 dated 13 November 1908	Approx. 2-1/4 sq. miles or 1440 acres		This area is free of all rights of grazing
17.	Gogi SF	State Forest/	30 sq. miles		
Total legally designated forest area			<ul style="list-style-type: none"> 78,792 ha including Gogi SF 75,792 excluding Gogi SF 		

Source: Development Statistics of Balochistan, 2008; Balochistan Forest and Wildlife Department, 2010

Wildlife and protected areas

Table-20. Protected areas in Ziarat district

Name	District	Location/Area (hectares)	Established in (year)	IUCN Category	Established to Protect	Current Status	Notes
GAME (WILDLIFE) SANCTUARIES							
Ziarat	Ziarat	30024'N 67044'E 37247 ha	1971	V	Markhor and Urial	Notified	Straight -horned Markhor may still exist
Sasnamana	Ziarat	6607 ha	1971	IV	juniper forest	Notified	May have important reptile fauna
Gogi	Ziarat	10364 ha	1962		Juniper	Notified	
Wam	Ziarat	300 27'N 670 43'E 3887 ha	1962		Juniper	Notified	

SOURCE: Frisina et al 1998; Groombridge, 1988; IUCN, 1997; WWF, 1997

Climatic conditions in Ziarat

Table-21. Month wise average rainfall in Ziarat tehsil

Month	Rainfall (mm)
January	51.8
February	53.8
March	50.8
April	21.6
May	7.4
June	4.1
July	13.7
August	7.6
September	1.3
October	1.8
November	6.4
December	26.9

SOURCE: Bureau of Water Resources; Development Statistics of Balochistan, 2008

Table-22. Comparison of crops for the years 2005-06 and 2007-08

		Area in Hectares			Production in Tones		
		Irrigated	Un-Irrigated	Total	Irrigated	Un-Irrigated	Total
2005-06	Rabi Crops	100	-	100	192	-	192
	Kharif Crops	2960	-	2960	26563	-	26563
	Grand Total	3060	-	3060	26755	-	26755
2007-08	Kharif Crops	2973	0	2973	38397	0	38397
	Rabi Crops	30	50	80	57	51	108
	Total	3003	50	3053	38454	51	38505

SOURCE: Agricultural Statistics of Balochistan, 2005-2006 and 2007-2008

Table-23. Comparison of area, production and yield of rabi crops in Ziarat district 2005-06 and 2007-08

Crops	Year	Area in Hectares			Production in Tones			Yield in Kg/Ha:		
		Irrigated	Un-Irrigated	Total	Irrigated	Un-Irrigated	Total	Irrigated	Un-Irrigated	Total
Wheat	2005-06	100	-	100	192	-	192	1920	-	1920
	2007-08	30	50	80	57	51	108	1900	1020	1350
Fruits	2005-06	2843	-	2843	24735	-	24735	8700	-	8700
	2007-08	2843		2843	36353		36353	12787	-	12787
Onion	2005-06	18	-	18	243	-	243	13500	-	13500
	2007-08	15		15	203		203	13533		13533
Potato	2005-06	99	-	99	1585	-	1585	16010	-	16010
	2007-08	115		115	1841		1841	16009		16009

SOURCE: Agricultural Statistics of Balochistan, 2005-06 and 2007-08

Table-24. Area and production of onion and potato in Ziarat district, 2004-05 to 2006-07

Vegetable	Area in Hectares			Production in Tones		
	2004-05	2005-06	2006-07	2004-05	2005-06	2006-07
Onion	18	18	15	243	243	203
Potato	50	35	25	707	511	365

SOURCE: Agricultural Statistics of Balochistan, 2004-05 and 2006-07

Table-25. Water requirements of major crops (CWR) in Zone-V (applicable to Ziarat district), 2006

Crops	ETO (mm)	CWR (mm)
Wheat	431	314
Potato	1,082-1270	686-825
Onion	1,059-1227	603-698
Sunflower	909-964	784-842
Grapes	2,026	928
Apple/Cherry	2,125	1,393
Apricot/Almonds	2,126	1,393
Pomegranate	2,126	1,393
Alfalfa	1,049	833

SOURCE: Water Requirements of Major Crops for Different Agro-climatic Zones of Balochistan, 2006

Livestock

Table-26. Cattle in Ziarat district, 2006

Cattle Breed	Hhs. Reporting	Cattle (male)				Cattle (female)				
		3 Years and Above		Young stock		3 Years And Above			Young Stock	
		For Breeding	Others	Below 1 yr	1 yr Below 3 yr	In Milk	Dry	Not Yet Calved	Below 1 yr	1 yr - Below 3 yr
Total	1929	41	147	276	9	1051	358	16	28	3
Sahiwal	5	-	-	-	-	-	-	-	5	-
Red Sindhi	9	-	2	-	-	-	7	-	-	-
Thari	2	-	-	-	1	-	1	-	-	-
Bhag Nari	311	1	7	-	-	2	300	-	1	
Dhanni	8	-	-	-	-	-	8	-	-	-
Kankraj	2	-	-	-	-	2	-	-	-	-
Lohani	188	-	-	-	-	188	-	-	-	-
Achai	92	2	90	-	-	-	-	-	-	-
Gabralli	24	-	21	1	-	-	2	-	-	
Foreign/ Cross Breed	338	12	7	112	6	164	12	8	15	2
Others	949	25	20	163	2	695	28	8	6	1

SOURCE: Balochistan Livestock Census, 2006

Table-27. Sheep breeds in Ziarat district

Breed	Total sheep	One year and above			Young stock below 1 year
		Total	Male	Female	
Total	120054	90268	34257	56011	39786
Lohi	10	5	-	5	5
Thalli	488	348	51	297	140
Bekaneere	4	4	-	4	-
Harnai	34523	24825	6551	18273	9698
Balochi	1898	1433	919	514	464
Bibrik	15	15	7	8	-
Waziri	1	1	-	1	-
Rakhshani	110	80	60	20	30
Kail	10	7	2	5	3
Others	82995	63549	26666	36883	19446

SOURCE: Balochistan Livestock Census, 2006

Table-28. Goat breeds in Ziarat district

Breed	Total	One year and above			Young stock below 1 year
		Total	Male	Female	
Total	138440	81954	22592	59362	56486
Teddy	1427	652	284	367	775
Kamori	6236	4590	1165	3425	1646
Kaghani	5570	3716	65	3651	1854
Damani	5576	4238	892	3346	1338
Daira Din Panah	22	15	3	12	7
Nachi	11598	9368	4461	4907	2230
Jatan	10	-	-	-	10
Barbery	5394	4173	443	3730	1221
Chappar	26	16	5	10	10
Others	102580	55187	15274	39914	47393

SOURCE: Balochistan Livestock Census, 2006

Table-29. Veterinary coverage and factors regarding sheep, goats and camels, 2005-2006

Purpose		Vaccinated	Fallen sick	Treated	Slaughtered on Eid Ul Azha	Slaughtered on Other Days	Sold out	Died	Purchased	Born
Sheep	HHS Reporting	1135	454	427	1243	349	106	179	48	-
	Number of Sheep	41997	11992	10908	1539	749	971	1294	249	-
	HHS Reporting	301	163	148	-	13	16	37	117	1625
	Number of Young stock	8931	7176	6697	-	45	102	249	284	29898
Goats	HHS Reporting	626	525	501	858	640	174	402	108	-
	Number of Goats	36399	13396	11801	1341	1887	1993	3413	643	-
	HHS Reporting	81	25	11	-	1	15	26	10	1508
	Number of Young stock	3143	418	92	-	2	227	175	61	56829
Camels	HHS Reporting	-	-	-	-	-	-	1	-	-
	Number of Young stock	-	-	-	-	-	-	21	-	-

SOURCE: Balochistan Livestock Census, 2006

Mines and minerals

Table-30. Minerals and mining in Ziarat district, 2009

S. No.	Mineral	Field/ Locality	Annual Production	Add. Information/ Remarks
1.	Coal	Wadan, Mangi Kach	Unmeasured or not being exploited	
2.	Marble	Shireen, Surai, Chasnak, Kahn China, South of Pui, Nargis Nari	105 MT	<ul style="list-style-type: none"> Marble tiles made in Sanjawi Tehsil Required for improvement Cutters/Gang saw/ Transportation in sheet form Finished product Training
3.	Laterite / Titanium oxide	Ziarat	Unmeasured	Titanium oxide about 1%
4.	Calcite	Ziarat district	98 MT	
5.	Silica sand	Kachh	Unmeasured	

SOURCE: Balochistan Directorate General of Minerals and Mining, 2010

Communication

Table-31. Coverage of telecom facilities in Ziarat district, 2004

Telephone lines per 100 population	1.19
Mobile Phones per 100 population	0.00
Personal computers per 100 population	0.00
Internet per 100 population	0.03

SOURCE: MICS, 2004

Table-32. Percentage of houses by communication in Ziarat tehsil

Television	11.75
Radio	60.12
Newspaper	29.40

SOURCE: District Census Report, 1988

Table-33. Number of Post Offices in Ziarat district

Year	Number of Post Offices
2001	8
2002	7
2003	7
2004	12
2005	13
2006	14
2007	8

SOURCE: Post Master General Office, 2007

Table-34. Number of exchanges in Ziarat district, 2007

Connections	Auto	WLL	Total
Exchanges	4	2	6
Auto Telephone	979	-	979
Wireless Loop	-	348	348

SOURCE: General Manager, Pakistan Telecommunications Limited, 2007

Provincial finances

Table-35. PSDP allocation for Ziarat district (Rs. in million)

Ongoing			Estimated Cost		Exp: Upto June 2008		Fin. Achv.	Allocation 2008-09				Thr:Fwd GOB/FPA
Sector/ -Sub Sector	Project ID	Project Name	GOB/ FPA	TOTAL	GOB/ FPA	TOTAL		Capital / FPA	Revenue	Total	Fin: Target %	
Roads	Z2001.0654 (Approved)	Const. of Domyara Dozakh (Tangi road)	58.186	58.186	39.633	39.633	68%	18.533	0	18.533	100%	0
	Z2005.0245 (Approved)	Const. of Surshor to Nishpa (15 km)	48.661	48.661	22.6	22.6	46%	10	0	10	66%	16.061
	Z2005.246 (Approved)	Const. of road at Poi Shireen (10 km)	27.791	27.297	19.791	19.179	71%	8	0	8	100%	0
	Z2005.0160 (Approved)	B/t of Sanjawi Asghara road (17.8 km)	79.189	79.189	46	46	58%	15	0	15	77%	18.189
	Z2005.0611 (Approved)	B/t Eastern Kawas Link road (11.6 km)	52.698	52.698	15.333	15.333	29%	15	0	15	57%	22.365
Irrigation	Z2003.1130 (Approved)	Const. of delay action dam Sarabalkai (revised)	26.85	26.85	16.85	16.85	62%	10	0	10	100%	0
Education	Z2005.0247 Ziarat Approved	Inter College Sanjawi.	41.864	41.864	31.864	31.864	76%	10	0	10	100%	0

SOURCE: PSDP, 2008-09

Table-36. PSDP 2009-10 - Completion of incomplete schemes in Ziarat district

Ziarat District	Project Name	Cost GOB	Jun-08	Capital	Revenue	Total
Z2008.0025	Special Repair and Complete Renovation of SandGAD Rest House at Ziarat	3.766	0	3.766	0	3.766
Z2005.0610	B/T of Sanjawi Asghara Road 17.8 Km	79.189	71	8.189	0	8.189
Z2001.0654	Const. of Domyarra Dozakh Tangi Road	61.998	54.744	7.254	0	7.254

SOURCE: Balochistan PSDP, 2009-10

Table-37. Sector wise PSDP of Ziarat district (2009-10) original (Rs. in million)

S. No	Project ID	Project Name	Estimated Cost		Exp: Upto June 2009		Fin. Achv.	Allocation 2009-10				Thr:Fwd GOB/FPA
			GOB/ FPA	TOTAL	GOB/ FPA	TOTAL		Capital / FPA	Revenue	Total	Fin: Target %	
68	Ongoing											
Communication (roads)												
76	Z2003.0011 (Ziarat (Approved))	Black Topping of Zandra Mana (Speraragha Sasnak Road (0.00 TO 24.875 Km))	104.497	104.5	79.055	79.055	75%	10	0	10	85%	15.442
160	Z2005.0245 (Ziarat (Approved NEW))	Const. of Surshor to Nishpa Ziarat (15 Km)	52.87	52.87	37.6	37.6	71%	15.27	0	15.27	100%	0
300	Z2009.0293 (Ziarat (Unapproved NEW))	Con. of Road In Ziarat	60	60	0	0	0%	45	0	45	75%	15
370	Z2005.0611 (Ziarat (Approved))	B/T Eastern Kawas Lind Road 11.6 Km	52.598	52.698	35.333	35.333	67%	7	0	7	80%	10.365
Sector: Irrigation (Surface Irrigation)												
402	Z2009.0292 (Ziarat (Unapproved NEW))	Const of Small Irrigation - And Flood Irrigation Schemes (In Ziarat)	60	60	0	0	0%	47	0	47	78%	13
Sector: Education (College Education)												
483	Z2005.0247 (Ziarat (Approved))	Inter College Sanjawi.	54.117	54.117	35.197	35.197	65%	7	0	7	77%	11.92

SOURCE: PSDP, 2010-11

Annex 2: Juniper Association – key mammal species

Species Name	Distribution
Asiatic black bear (<i>Selenaretos thibetanus</i>)	In Balochistan typically associated with the dwarf or Mazri palm. Also observed near Ziarat in 1972.
Forest dormouse (<i>Dryomys nitedula</i>)	Found at higher elevations, associated with juniper forests in Quetta and Ziarat.
Migratory hamster or Grey Hamster (<i>Cricetulus migratoreus</i>)	Ziarat and Kalat.
Pallas's cat (<i>Felis Manul</i>)	Ziarat

Annex 3: Juniper Association – key bird species

Species Name	Distribution
<i>Aegithalaiseus leucogenys</i>	Ziarat and Fort Sandeman coniferous forests.
Allied grey shrike (<i>Lanius excubitor pallidirostris</i>)	Ziarat, Kalat and breeds in Quetta.
Black bird (<i>Turdus merula intermedia</i>)	Ziarat, Quetta and Kandhar (one recorded).
Black Simla tit (<i>Parus rufonuchalis rufonuchalis</i>)	Common in juniper forests of Ziarat.
Black throated aceentor (<i>Prunella atrogularis</i>)	Ziarat in summer and lower valleys of northern Baluchistan in the winter.
Brown pipit (<i>Anthus sordidus decaptus</i>)	Ziarat and Kalat.
Chakur (<i>Alectoris graeca koraikovi</i>)	Ziarat and Quetta.
Common summer visitor (<i>Passer domesticus indicus</i>)	Ziarat, Kalat and Quetta.
<i>Coracias granola semen owl</i>	Common in Ziarat in the summer.
European nightjar (<i>Caprimulgus europaeus unwinii</i>)	
Gold finch (<i>Carduelis coniceps coniceps</i>)	Summer visitor to Ziarat. Winter visitor to Quetta, Chaman, Kandhar.
Golden eagle (<i>Aquila chrysaetos daphanae</i>)	Ziarat and Quetta.
Hargitts zealy-bellied green wood pecker (<i>Picus sguamata flavirostris</i>)	Juniper forest of Ziarat. Other forested hills of northeastern Balochistan. Moves to Quetta in the winter.
Himalayan tree creeper (<i>Certhia himalayana limes</i>)	Ziarat and Quetta.
Hobby (<i>Falco subbuteo subbuteo</i>)	Ziarat and Quetta.
Humez's nightjar.	Ziarat, Kalat and Quetta.
Indian sparrow hawk (<i>Accipiter nisus melanoschistos</i>)	Juniper forests Ziarat.

Species Name	Distribution
Kashmir magpie (<i>Pica pica baetuiana</i>)	Ziarat, Kalat, Mastung, Quetta, Breeds in Junipers, Pistachios, etc.
Lammergrier (<i>Gypaetus barbatus grandis</i>)	Ziarat and Quetta.
Lesser white throat (<i>Sylvia Ccurruea affinis</i>)	Ziarat, Quetta and Kalat.
Long-legged buzzard (<i>Buteo ferox ferox</i>)	Ziarat.
Marked wagtail (<i>Motacilla alba personate</i>)	Ziarat and Quetta.
Missel thrush (<i>Turdus viscivorus bonapartei</i>)	Breeds commonly in the juniper forests of Ziarat.
Mongolian trumpeter rose finch (<i>Charpodaeus erythrurus roseatus</i>)	Common in May in Ziarat. Breeds also in Quetta in summer.
Olivaceous white willow warbler (<i>Phylloseopus indicus</i>)	Ziarat juniper forest.
Orphean warbler - straggler (<i>Sylvia hortensis crasirostris</i>)	Ziarat and Quetta.
<i>Parus major intermedius</i>	Ziarat, Harboi, Khojak, Zarghun Takatu (Breeds in higher mountains)
<i>Passer domesticus parkini</i>	
Plain willo warbler (<i>Phullosespus negleetus negleetus</i>)	Common summer visitor. Breeds in Ziarat, comes to Quetta valley in August.
Raven (<i>Eorvus corax laurencei</i>)	Ziarat and Quetta valley.
Red mantle rose finch (<i>Carpodaeus erythrurus grandis</i>)	Quetta valley, Ziarat juniper forests (autumn)
Red-billed chough (<i>Pyrrhocorax pyrrhocorax</i>)	Quetta valley, Ziarat (W.V), breeds in highest hills Quetta and Ziarat.
Red-breasted fly-catcher (<i>Siphia parva parva</i>)	Passage migrant in northern Baluchistan, is seen in Ziarat in September and Quetta in December.
Red-capped peregrine (<i>Falco peregrinus babylonicus</i>)	Ziarat and Quetta.
Red-fronted serin (<i>Serinus pusillus</i>)	Common resident and breeding in higher hills of northern Baluchistan (Ziarat, Takatu, Murdar, Khajak and elsewhere between 800-10000 feet).
Red-headed Bunting (<i>E. iceterica</i>)	Common as passage migrant in Ziarat and Quetta. Local summer visitor through out northern Balochisan - breeds between 5500-8000 feet.
Red-headed bunting (<i>E. ictericia</i>)	Local summer visitor throughout northern Balochisan. Breeds between 5500-8000 feet. Common as passage migrant in Ziarat and Quetta.
Red-headed tit (<i>Aegithaliseus leucogenys</i>)	Ziarat in May-July.
Rock-thrush (<i>Monticola saxtilis</i>)	Breeds in the higher hills of Ziarat and Zarghun, also seen in Quetta.
Rosy pastor (<i>Pastor roseus</i>)	Ziarat and Quetta valley passage migrant.

Species Name	Distribution
Rufous shrike (<i>Lanius eristatus phoenicuroides</i>)	Summer visitor to northern Balochistan. Breeds in Ziarat, Quetta, Murdar, Takatu and Khaliphat.
Short-toed lark (<i>Calandrella brachydactyla longepennis</i>)	Ziarat.
Siberian chat (<i>Oenanthe leucometa</i>)	Ziarat and Quetta.
Small white throat (<i>Sylvia currua minuta</i>)	Ziarat in June.
Spotted fly catcher (<i>Muscicapa striata neumanni</i>)	Passage migrant at lower elevation, breeds around Ziarat.
Streaked laughing thrush (<i>Lanthocincia lineta ziaratensis</i>)	Ziarat.
Streaked scrub warbler (<i>Scotocerea inquietus striatus</i>)	Ziarat, Kalat and Quetta (breeds).
<i>Sylvia communis ieterops</i>	Ziarat and Quetta.
Tree pipit (<i>Anthus trivalis trivalis</i>)	Ziarat and Quetta.
Twany pipit (<i>Anthus capestris griseus</i>)	Ziarat and Quetta.
Whit-thorated munia (<i>Uroloneha malbarica</i>)	Ziarat, Quetta and southern Kalat.
Whit-winged grosbeak (<i>Mycerobas carinpes speculigerus</i>)	Ziarat, Kalat, Kaliphat, Murdar and northern Balochistan. Found in autumn among juniper trees.
White-capped bunting (<i>E. stervarti</i>)	Common summer visitor to northern Balochistan. Common in juniper forests of Ziarat.
Willow warbler (<i>Phylloscopus nitidus nitidus</i>)	Ziarat and Quetta.

Annex 4: Juniper Association – key reptile species

Species Name	Distribution
Afghan headed snake	
Cliff racer	
Coluber (<i>rhodorachis</i>)	Ziarat.
Ridgeway (<i>Lytorhynchus</i>)	Ziarat and Quetta.

Annex 5: Millennium development goals

Goal 1: eradicate extreme poverty and hunger

Target 1.a: halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day

Target 1.b: achieve full and productive employment and decent work for all, including women and young people

Target 1.c: halve, between 1990 and 2015, the proportion of people who suffer from hunger

Goal 2: achieve universal primary education

Target 2.a: ensure that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Goal 3: promote gender equality and empower women

Target 3.a: eliminate gender disparity in primary and secondary education, preferably by 2005, and at all levels of education no later than 2015

Goal 4: reduce child mortality

Target 4.a: reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

Goal 5: improve maternal health

Target 5.a: reduce by three-quarters the maternal mortality ratio

Target 5.b: achieve universal access to reproductive health

Goal 6: combat HIV/AIDS, malaria, and other diseases

Target 6.a: have halted by 2015 and begun to reverse the spread of HIV/AIDS

Target 6.b: achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it

Target 6.c: have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

Goal 7: ensure environmental sustainability

Target 7.a: integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources

Target 7.b: reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss

Target 7.c: halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

Target 7.d: by 2020, to have achieved a significant improvement by 2020 in the lives of at least 100 million slum dwellers

Goal 8: develop a global partnership for development

Target 8.a: develop further an open, rule-based, predictable, non-discriminatory trading and financial system

Target 8.b: address the special needs of the least developed countries

Target 8.c: address the special needs of landlocked countries and small island developing states

Target 8.d: deal comprehensively with the debt problems of developing countries

Target 8.e: in cooperation with developing countries, develop and implement strategies for decent and productive work for youth

Target 8.f: in cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries

Target 8.g: in cooperation with the private sector, make available the benefits of new technologies, especially information and communication

Source: United Nations Development Programme 2000; Millennium Development Goals <www.un.org/millenniumgoals/goals> Accessed 6 October 2011

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