Public Health in the Middle East

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Introduction

The flow of ideas, people, and commerce across national boundaries has been occurring with breathtaking rapidity in the broader Middle East, as elsewhere. These increasingly dense exchanges have generated new threats and vulnerabilities that have tended to impact women, children, and the poorest members of society disproportionately. They also have given people more resources and opportunities with which to shape their lives and their futures.

In January 2010, the Middle East Institute (MEI) launched the “Crossing Borders” project whose aim is to bring to light how ordinary citizens and stakeholders in the Middle East initiate action and conduct activities designed to cope with and combat challenges to their well being — if not their survival. Since then, MEI has published seven special editions of Viewpoints, which are devoted to the subjects of migration, education, and the environment.

This, the last special edition in the series, explores some of the key public health challenges facing Middle Eastern countries, and the efforts that can, should, and are being made to address them.
Peace-Building Through Health in the Israeli-Palestinian Conflict: The Six-Year Experience of Healing Across the Divides

Norbert Goldfield

Approximately six months ago, I asked an astute long-time American observer of the Israeli-Palestinian conflict whether we had come to the end of the road for a two-state solution. He replied that we had come to the end of that road in 1967. Putting it differently, Zhou Enlai, the premier of the People's Republic of China under Mao Zedong, when asked what he thought of the French Revolution, reportedly replied that it was too early to tell.

Despite these challenges, it is certain that groups and individuals throughout the world will continue to pursue peace and attempt to resolve conflicts in new and innovative ways even when, as in the case of the Israeli-Palestinian conflict, there may be no apparent way forward. In the face of this bleak outlook, US-based not-for-profit Healing Across the Divides takes a bottom-up approach to the Israeli-Palestinian conflict and provides grants that will have the following effects:

1. Improve the health of individual women and/or increase individuals’ control of their chronic diseases such as diabetes (today’s epidemic) via community-based interventions. We hope to see this happen both on an individual basis and on a system-wide basis if the community-based intervention succeeds in a local area.
2. Increase the organizational and technical capacity of community-based organizations (CBOs) to impact their communities and hopefully beyond.
3. Strengthen the leadership of these CBOs with the hope that some of these individuals will have an impact beyond their communities.

PEACE-BUILDING THROUGH HEALTH

According to a recent meeting at the United States Institute of Peace, peace-building through health can produce “an environment that increases people’s investment in peace and can reduce, if not relieve, tensions that contribute to conflict.”\(^1\) Developed by health professionals working at the World Health Organization in the 1990s, peace-building through health advocates have developed a number of intervention “tools,” including:

- Strengthening communities
- Communicating knowledge
- Extending solidarity by use of health professional clinical skills

In brief, Healing Across the Divides has attempted to strengthen communities via grants and the communication of knowledge. That is, we provide technical advice to CBOs pertaining to outcomes evaluation on approaches to community-based health improvement. We have also attempted to personalize the “enemy” by inviting both Palestinian and Jewish grantees to the United States. They speak before diverse groups across the entire political spectrum of the Israeli-Palestinian conflict. In addition, groups we have funded, which traditionally have not worked together and are from different ethnic groups, have begun to work together (e.g., a CBO representing Ethiopian Jews and another working with Israeli Arabs).

GOVERNMENTAL AND PRIVATE ORGANIZATIONAL ROLES IN HEALTH IMPROVEMENT

The June 30, 2011 issue of The Economist published an article with the following headline: “Privatising peace: Governments are increasingly handing over the early stages of conflict resolution to independent organizations.” While the article in The Economist went on to detail the increasing role of private non-governmental organizations (NGOs), the reality is that the resources that these private organizations can command is paltry compared to funding from governments. Thus, without European and American subsidies, the Palestine Authority would cease to exist, while the American government’s foreign aid budget to Israel is the largest to any country in the world.

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The Economist article also highlights the nimble and non-bureaucratic ability of NGOs to facilitate change such as improvement in the health of women. While we do not bring to bear even a fraction of the resources that a government does, NGOs such as Healing Across the Divides can fund pilot programs which, if successful, could constitute the seeds of system-wide change. Healing Across the Divides has funded a number of pilot programs for community-based organizations both in Israel and the West Bank.

A SAMPLING OF PROJECT INITIATIVES HEALING ACROSS THE DIVIDES

Healing Across the Divides has provided extensive training to community-based groups on both sides of the Green

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Line on evaluation of health care interventions, quality improvement techniques, and organizational capacity building. In peer-reviewed publications and at conferences, community-based organizations partially funded by Healing Across the Divides have documented health disparities and programmatic impacts on the health of Palestinian diabetics, Orthodox Jewish women, and Palestinian women in the West Bank.³

We have supported approximately 15 community-based organizations, including the following:

- **Beit Natan** represents Orthodox Jewish women in Jerusalem working on breast cancer. Orthodox Jewish women have a higher rate of breast cancer diagnosed at a later stage of the disease. The project we funded focuses on increasing the early detection rates of breast cancer through community outreach and the training of female physicians in “clinical breast examination,” a technique that can substitute for mammography but needs to be done by a female health professional.

- **Al-Tufula** in Nazareth, Israel has worked with Israeli Arab women living in villages in northern Israel with few, if any, municipal services. These towns typically have no access to health services. Although the towns may technically have a right to such services, the distance may be too far to access them. The project aims to help women improve their own health (through, for example, a walking club) while also approaching the health system to insist that they provide services such as gynecologic care.

- **Dar Al Kalima** in Bethlehem, Palestine Authority, focuses on Palestinian women’s health issues. Currently, they are beginning to work with a village in the West Bank near Bethlehem that has significant access issues because of the wall that separates Israel from the Occupied Palestinian Territories.

- **The Palestine Medical Relief Society** has focused on improving diabetes care using community health workers in numerous villages throughout the West Bank. Almost 15% of Palestinians have diabetes.

- **Tene Briut**, an Ethiopian Jewish organization, is dedicated to improving the health of Ethiopian Jews who have moved to Israel over the past 25 years. Almost 20% of Ethiopian Jewish adults have diabetes, a disease that was virtually non-existent when these Ethiopians lived in Ethiopia. Tene Briut has also used community health workers in this endeavor.

Given the fact that foundations have had a significant role on both sides of the Israeli-Palestinian conflict, we have tried to encourage policy engagement and financial partnership with foundations — wherever they might be and whatever their political inclinations. Thus far, we have worked collaboratively with two Israeli and one American Jewish Federation Foundations (city-wide Jewish organizations that fund projects both in the city in which the Federation is based and beyond).

Most recently, we collaborated with an American foundation to combine scientific engagement with significantly more resources to fund both Jewish and Arab women’s groups in Israel. The women’s groups we will be funding include an Israeli-Arab women’s group that is focused on improving women’s health in the largest and very impoverished Bedouin town in Israel (Rahat); a joint Israeli-Jewish and Arab effort between community-based groups representing low-income physically handicapped women; and an Ethiopian Jewish effort to improve sex education among low-income female Ethiopian teenagers.

CONCLUDING COMMENTS

Healing Across the Divides is not a humanitarian organization. We have profound respect for organizations that perform this service, particularly for the large number of impoverished people living in the West Bank and Gaza and the increasing number of marginalized people in Israel. Our objective, however, is to promote, at a minimum, measurable individual health improvement which, while sounding humanitarian, is not; we insist that this be accomplished in a community context. The community-based grantees on both sides of the divide have had an impact on the lives of thousands of marginalized Palestinians and Jews. In addition, we aim for system-wide change; we seek societal change, such as improved care for breast cancer and diabetes at the national level.

We hope that CBOs will impact their own societies and beyond, such as the recent political alliance between an Ethiopian and an Israeli-Arab organization that we funded, which focuses on health rights issues. Hopefully, a similar alliance will be forged between Israeli and Palestinian politicians and eventually between community-based groups on both sides of the divide. In the words of Benjamin Disraeli, “Successful politics is always the art of the possible. It is no less true, however, that the possible is often achieved only by reaching out towards the impossible which lies beyond it.”
The Iraq-SAMHSA Partnership to Strengthen Behavioral Health Services

Winnie Mitchell and Sabah Sadik

For nearly eight years — since May 2004 — the Substance Abuse and Mental Health Services Administration (SAMHSA) of the US Department of Health and Human Services (HHS) has partnered with the Iraqi Ministry of Health to help Iraq re-establish its behavioral health service system. HHS and SAMHSA have learned much from this effort about improving behavioral health services in the US, particularly for Muslim populations and for persons experiencing extended trauma.

The impact of war on the Iraqi population cannot be overstated. The lingering effects of over 30 years of war and an unpredictable and brutal regime are still present today and there is a clear need to help Iraqis rebuild professional and personal trust in each other. Even though the goal of the Iraq-SAMHSA collaboration has been rebuilding Iraq’s behavioral health services sector, clearly its key impact has ultimately been in helping the Iraqis restore this trust. Significantly, one of SAMHSA’s first actions was to support the participation of Dr. Nesif al-Hemiary, now a leader in substance abuse services in Iraq, in the Global Mental Health Trauma and Recovery Program of the Harvard Program in Refugee Trauma in 2004 and 2005, where he learned that healing trauma in a country experiencing war and strife is the foundation for rebuilding mental wellbeing and regaining trust.

Since its formal inception, the partnership between Iraq and SAMHSA has featured the following:

- **Ongoing and regular contact**: In May 2004, SAMHSA established the **Planning Group on Iraq Mental Health**, co-chaired by Iraq’s then-National Mental Health Advisor, Dr. Sabah Sadik (now head of training for Iraq’s Ministry of Health), and including mental health experts in the US and the UK (including Iraqi-born professionals), representatives of key non-governmental organizations, and US government officials from HHS, the Department of Defense (DOD), and the State Department. The Planning Group immediately began to hold periodic conference calls and was responsible for the first set of activities of this new partnership — the SAMHSA-sponsored “Mental Health Action Planning Conferences” in Amman in 2005 and in Cairo in 2006. Iraq went on to hold its third Mental Health Action Planning Conference in Baghdad in October 2008 and now holds these conferences yearly in Iraq.

The Planning Group also developed and oversaw the **Iraq-SAMHSA Initiative**. Through this initiative (described in more detail below), multidisciplinary teams from Iraq visited SAMHSA and host sites around the US in 2008 and 2010 to learn about various interventions the Iraqi teams wanted to implement in Iraq.

The authors wish to acknowledge and thank members of the Planning Council who contributed to the preparation of this essay.
• **Transparent and open activities:** Information on all activities of the Planning Group has been made widely available in Iraq, including proceedings of the first two Action Planning Conferences and summaries of the Planning Group calls. A notable feature of the Iraq-SAMHSA Initiative has been the application process, in which multidisciplinary teams from Iraq have submitted applications to SAMHSA that are based on the standard SAMHSA application for funding, which were then reviewed by an independent group of peer reviewers who scored the applications and sent the scores to Iraq and SAMHSA leadership.

• **Shared Decision Making:** In the first years of this partnership, SAMHSA funded the Action Planning Conferences and the 2008 Iraq-SAMHSA Initiative in their entirety. The 2010 Iraq-SAMHSA Initiative was co-sponsored by SAMHSA and the Iraq Ministry of Health so that decisions about teams to participate were made by Iraq's Minister of Health based on scores determined by the independent group of reviewers.

The work of rebuilding Iraq’s behavioral health services involved two key approaches. First was strategic planning through the convening of two “**Mental Health Action Planning Conferences**” in 2005 and 2006 during which participants from all regions of Iraq, both male and female, and representatives of multiple health professions, met to develop strategies for reestablishing behavioral health services. Second was manpower development through enabling the Iraqis to participate in relevant trainings, such as the Harvard training noted earlier and to visit host sites in the US that had expertise in the program areas the Iraqis wanted to implement in Iraq — through the **Iraq-SAMHSA Initiative**.

**IRAQ’S MENTAL HEALTH ACTION PLANNING CONFERENCES**

These Action Planning Conferences introduced Iraqis to medical standard concepts of mental illness, mental health, and substance abuse, and presented them with concepts of leadership and team-building in behavioral health services. Common themes and priorities emerged from these conferences and previewed the kinds of interventions and activities the Iraqis wanted to observe in the US:

• **Community-Based, Integrated Behavioral Health Services:** Repeated calls for deinstitutionalization, including support for family caregivers and recognition that spiritual and community leaders play a significant role in reducing stigma, preparing the community for this approach, and providing such services.

• **Multidisciplinary teams:** Initial calls for mental health training for primary care workers (e.g., pediatricians and ob-gyns, general practitioners, and nurses) and expanding the range of mental health work-

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ers into a broader emphasis on establishing mental health teams (including social workers, psychiatric nurses, psychologists, and health care workers), and on the importance of their partnerships with other health care workers for effective mental health services.

- **Services for Children and Adolescents:** In every conference, participants underscored the need to address behavioral health services for children and adolescents.

- **Substance Abuse:** In 2006, participants adopted recommendations to prevent and reduce substance abuse and integrate substance abuse services along with mental health services into primary care.

- **Research Capacity:** At each conference, Iraqis continued their calls for formal and direct ties between Iraq's Ministry of Health (MOH) and Ministry of Higher Education and in 2006 identified forensics as a services research priority.

**IRAQ-SAMHSA INITIATIVE**

In the summer of 2008, Iraq and SAMHSA launched the Iraq-SAMHSA Initiative, bringing six teams of four members each to the US for three weeks to learn and observe behavioral health interventions; these teams then received ongoing technical assistance from SAMHSA, the host sites, and the Planning Group on Iraq Mental Health for a year after their return to Iraq. Again in the fall of 2010, another six teams of Iraqis came to the US for four weeks of learning and observation at host sites, followed by a year of technical assistance.

**First Cohort:** In the summer and fall of 2008, the Iraq-SAMHSA Initiative brought six multidisciplinary teams of Iraqi behavioral health providers to visit various host sites in the US to learn about interventions they wanted to implement in Iraq. Each team spent three weeks at one or more host sites to learn and observe behavioral health interventions in a particular area the team wanted to address in Iraq. Two of the six teams visited sites to learn about trauma services, one team visited a host site to learn about community-based services that enable persons with mental illnesses to remain at home, another team observed inpatient and outpatient substance abuse services, a fifth team observed children's mental health services in schools, and a final team learned about mental health services for the elderly. After their visits with the host sites, the teams returned to SAMHSA to report on their observations and plans.

A key feature of this activity, but one fraught with logistical problems, was the ongoing two-way training and technical assistance between the Iraqi team members, their host sites, and their SAMHSA project officers. For example, Summit Pointe, the host site for the team on mental health services for the elderly, held regular conference calls with their colleagues in Baghdad, and participated in Iraq's Third National Mental Health Conference in Baghdad in October 2008. SAMHSA, the Veterans Administration (VA), and Summit Pointe held conference calls with the team from Basra to hear about the training they had already provided and their progress in locating and staffing a trauma center called the

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2. For information on the efforts of the team from Basra, Iraq to establish a trauma center, see “Iraq Mends a System to Treat Trauma,” *The New York Times*, January 31, 2010.
“Sara Center” with the support of Iraq’s MOH. SAMHSA also sponsored several Planning Group members to meet with teams from this “First Cohort” in the fall of 2009 in Baghdad to discuss their progress and challenges.

**Second Cohort:** SAMHSA and the Ministry selected six teams of Iraqi behavioral health professionals to participate in the Second Cohort of the Iraq-SAMHSA Initiative, with funding support from both Iraq’s MOH and from SAMHSA. The six Iraqi teams who visited the US in the fall of 2010 observed trauma services, this time at a variety of award-winning trauma-informed care and services sites on the East Coast, and substance abuse services again at the INOVA Fairfax Comprehensive Addiction Treatment Services program (CATS) and now also at the Pacific Southwest ATTC at UCLA. Johns Hopkins again hosted an Iraqi team to observe school-based mental health services, and the Children’s National Medical Center again hosted a team to observe services for mothers and children with serious mental illnesses. Maryland’s Department of Health and Mental Hygiene, Division of Forensic Services, hosted a team to observe forensic psychiatric services. SAMHSA and the Planning Group now receive monthly updates from the Second Cohort teams.

A monograph on the Second Cohort’s activity is under development, which will likely feature highlights such as the following:

- The two 2010 teams here to observe trauma services have been incorporating trauma-informed care into their hospital and out-patient services, and
- With their US host site at UCLA, the substance abuse team visited a one-year substance abuse treatment certificate program at the University of Cairo and is arranging for Iraqi participation in this program (see below).

**NEXT STEPS**

Building on the activities of the Second Cohort’s substance abuse team, the State Department’s Bureau of International Narcotics and Law Enforcement Affairs (State/INL) is partnering with SAMHSA to help Iraq establish a Center of Excellence on Substance Abuse Services in Baghdad. SAMHSA has engaged Dr. Richard Rawson of UCLA’s Integrated Substance Abuse Programs (ISAP) to work with Iraq’s Ministries of Health and Higher Education to develop the Center’s capacity to train Iraqis in providing services for substance use disorders (SUD), to conduct epidemiological studies to determine and address Iraq’s specific substance abuse problems, and to integrate substance abuse services into primary care.

Specifically, Dr. Rawson and ISAP will work with selected subcontracted organizations (Cairo University, SKOUN Lebanese Addictions Center, and Inova CATS in Virginia) to train a core group of Iraqi medical professionals who will dis-
seminate the clinical and research expertise more broadly into the larger nationwide SUD service systems. The primary activities will include intensive clinical training for Iraqis in Cairo and Beirut, service administration training in the US (SBIRT training at UCLA, and clinical management at Inova Fairfax), facilitating a Rapid Assessment of substance use in Iraq and the establishment of a Community Epidemiological Workgroup in Iraq, holding the first annual substance use conference in Baghdad, and enabling Iraqis to participate in SUD-related research activities and conferences.
Implications of the Iraq-SAMHSA Initiative for the Delivery of Behavioral Health Services in the United States

Winnie Mitchell and Sabah Sadik

Through the collaboration between Iraq and the Substance Abuse and Mental Health Services Administration (SAMHSA) of the US Department of Health and Human Services (HHS), US providers have learned a great deal about improving behavioral health services, including trauma services, from their Iraqi colleagues since 2004.\(^1\) Two of the many implications for US behavioral health services resulting from this partnership are directly relevant to shaping services for both returning veterans, and refugees and immigrants from the Middle East:

- **Programs in the US need to increase the involvement of families and communities**
  
  In reviewing the full range of observations detailed throughout the Monograph for the Iraqis’ first visit in 2008, one issue/lesson trumped all the others: the centrality of family and community in the lives of Iraqis, especially in such critical life events as marriage, the role of extended family, child rearing, trauma, illness, and the like. This family orientation was evident in both the visiting teams’ reactions to the services they observed and also in their projected plans for services back in Iraq. For example, one Iraqi team that came to the US to learn about community-based mental health services is implementing a model of such services for persons with serious mental illness in which a family member is hired to serve as a case manager. US host providers who participated in this program commented that the Iraqis did not want to visit nursing homes or hospices, for example, “because people in Iraq are never alone or deserted” and noted repeatedly how, in turn, they planned to develop and strengthen the family and social support components of their services to their clients.

- **“Recurring or Ongoing Trauma” may be a more appropriate characterization for much of the trauma experienced in conflict regions and under other circumstances (e.g., inner city street violence, domestic violence, childhood abuse, etc).**
  
  The phenomenon of recurring trauma has been the topic of much discussion among concerned professionals, both in the US, following redeployment of soldiers into combat zones in recent years, and also in Iraq, which has been in a state of war and turmoil for several decades. US providers were reminded by their Iraqi colleagues that, in situations of constant threat and recurring violence over a period of time, health consequences may be different from those that follow a one-time exposure. Repeated or continuing trauma may have more serious health and mental health

The authors wish to acknowledge and thank members of the Planning Council who contributed to the preparation of this essay.

1. Implications identified by members of the Planning Group on Iraq Mental Health in 2010 and published in the forthcoming monograph, *Lessons Learned from the First Cohort of the Iraq-SAMHSA Initiative.*
consequences that require careful examination, particularly with regard to issues of diagnostic characterization and approaches to treatment and rehabilitation. In other words, the intensity, duration, and frequency of exposure to violence must be carefully reconsidered in conceptualizing and assessing psychopathology, and also in our approaches to treatment and rehabilitation.

Potential research questions that warrant investigation include the following:

1. Are there differences in the diagnostic characterization, severity, and chronicity of behavioral health problems that follow a single or multiple exposures to various levels of violence? If so, are there any significant differences in response to various psychological and/or psychopharmacological approaches to treatment? In other words, does intensity, duration, or frequency of exposure to violence have implications for the nature or severity of the health problem that follows (e.g., headaches, somatic problems), and also for the problem’s response to one or another specific treatment?

2. What are the “active ingredients” of family involvement and support that contribute to a patient’s resilience and/or recovery? During childhood and adolescence, how does the intensity and duration of family involvement and support contribute to resilience?

3. Do differential levels of family involvement in the lives and treatment of patients with a given behavioral health problem (e.g., post-traumatic stress disorder or PTSD, drug abuse, etc.) have a differential effect on the course and outcome of treatment (psychological, social, academic, development, or a combination)? If so, is it intensity, frequency, or duration of family involvement that is important?

The answer to these and similar questions concerning socio-cultural, developmental, and genetic factors and their relevance to behavioral health may have implications for health policies and practices in many countries, but clearly need to be addressed as the US struggles to address the behavioral health needs of its veterans and immigrant populations.

In addition, SAMHSA and the US providers who participated in this activity learned other significant lessons for improving services in the US:

- Understanding other cultures is the foundation for working effectively with other countries to both help them identify and address their own needs — and also to help the US providers better understand and address the needs of refugees and immigrants from those and culturally similar countries. As one participant put it, “an essential requirement for an effective helping role will require an adequate level of … understanding, trust in each other and a sense of a common purpose.”
Iraqi notions of mental health and well-being were both inspirational and significant for working with other populations in the US who have experienced trauma:

- Religion/spirituality is essential to Iraqis in achieving and maintaining mental health and well-being. Religion/spirituality is a major factor in the lives of Iraqis and can serve as an effective therapeutic measure where well-trained spiritual leaders can play important roles in health education, prevention of illness, and compliance with medical advice. US host sites reported that the Iraqis were surprised by the lack of involvement in mental health and substance abuse services by religious leaders in the US. Although religious leaders are not viewed by Iraqi health professionals as therapeutic allies or collaborators, the average Iraqi individual and family seek comfort and peace through religious rituals and institutions when in distress or facing major problems of any kind. Religious leaders often advise patience, perseverance, hope, and trust in God.

- The Iraqis provided lessons about the impact of war and how people put conflict behind them, an example of resilience and inspiration to US hosts. The world is interested to know how wars end, how people put conflict and strife behind them and move on to a new life. It has been educational to see Iraqis look at tolerance and models of restorative justice as mental health issues in moving beyond the conflicts that have involved Iraq and the world beyond. Participants in the Iraq-SAMHSA Initiative, from both Iraq and the US, acknowledged and took seriously the impact of war (conflict) on Iraqis and Americans. The particular way in which we collectively focus on war-related issues is to understand the impact of violence, terror, or trauma and their ramifications psychologically, socially, and biologically, particularly through programs that view trauma as a component element of mental and physical disorders. Not only did the Iraqi guests demonstrate how, when in a peaceful environment that is free from ongoing conflict, they could immediately “get to work,” attend and learn, but they also regaled their hosts with funny stories and showed how, in the midst of terror and trauma, a sense of humor is invaluable.

As the Iraq-SAMHSA Initiative progressed, it became evident that the Iraqis were equipped to be true partners with their US colleagues as evidenced by their ready adoption of two major evidence-based practices used in the West:

1. **The use of multidisciplinary approaches in meeting behavioral health needs**: The concept of multidisciplinary teams in addressing behavioral health needs of clients was readily accepted by the Iraqis. This, we believe, is due to several factors including: a) the new and well-informed behavioral health leadership at the national level; b) the severe shortage of trained mental health specialists as a direct consequence of a massive “brain drain” during the past 30 years; c) the availability of few other behavioral health professionals (psychologists, social workers, nurses) in Iraq; and d) the specific requirement by SAMHSA for Iraqi teams applying to be part of the Iraq-SAMHSA Initiative to organize and implement their projects in a multidisciplinary manner. Even so, the Iraqis’ quick and
sincere adoption of the Multidisciplinary Team approach underscored the critical role this approach plays in effective behavioral health services, regardless of cultural or country differences, and the Iraqis’ incorporation of this approach in all their implementation plans and activities in Iraq was both inspiring and significant.

2. **Integration of behavioral health services into primary care** is a useful and necessary strategy in a country like Iraq that has too few mental health specialists (e.g., psychiatrists, clinical psychologists, psychiatric social workers, and psychiatric nurses) for its population. This doesn't simply mean primary care providers prescribing psychoactive medications, but also being well trained to conduct effective interventions and to collaborate with mental health specialists in addressing the cognitive, affective, motivational, and social needs of their patients. Moreover, providing mental health services within the primary health care setting aims to deliver comprehensive/holistic care while also reducing the impact of stigma typically associated with mental hospitals and clinics. The Iraqi teams and their national leadership are demonstrating the importance of this kind of systems-planning in limited resource settings. US providers noted however, that such comprehensive planning is important in all health systems. The United States has much to learn from countries that more systematically develop national strategies and plan the integration of behavioral health services into general health services in an effort to address the health needs of their people.

Finally, as SAMHSA staff, host sites participants, and members of the Planning Group on Iraq Mental Health reviewed our shared experiences with the visiting Iraqi health professionals, all aiming to improve behavioral health services in their country, it became clear that these experiences have certain implications for US service providers that are grounded in fundamental psychobiological needs that are common to all people, such as:

The need for physical and psychological security, social connections and support; the need for a certain degree of autonomy, self-reliance and competence; the need for openness and fairness when dealing with others, including governmental authorities and the need to be recognized, respected and accepted.

These common and shared needs, coupled with a general fear, stigma, and shame typically associated with mental illness and substance misuse and dependence in both countries, provided the common ground for sharing valuable observations and insights during the Iraqis’ visit to the US that helped providers from each country improve services.
Drug and alcohol problems know no borders. Annually, the United Nations World Drug Report documents that heroin, methamphetamine, cocaine, alcohol, and prescription drugs negatively impact public health, public safety, and social institutions in countries around the world.¹ In many parts of the Middle East, there is limited data on the nature and extent of alcohol and drug problems. In many countries in the region, governments and universities lack the infrastructure, funds, and expertise to conduct well-designed epidemiological evaluations.

A series of substance abuse needs assessment workshops and clinical training efforts with Middle East health and policy leaders and US participants in the 1990s was the foundation for an agenda of research, training, and capacity-building on alcohol and drug problems in the region.² This initial work has led to a program of addiction-related work in the Middle East region involving the United Nations Office on Drugs and Crime (UNODC) and the World Health Organization (WHO). The goal for the authors has been to work with public health and clinical leaders in the region to identify the nature and extent of substance use problems, to employ scientifically sound methods to measure and address these problems, and to provide training and technical assistance to help build a well-trained research and clinical workforce in the region. Beyond that, the overarching hope is that the work will help build substance abuse expertise in a context of cooperation across borders and above politics among the people in the region, who all hope for healthy families and drug-free communities.

A seminal event in this endeavor was a meeting on September 5–7, 2005, in which 58 researchers and policymakers from 23 countries and territories gathered in Istanbul, Turkey, for the landmark conference titled “Delivery Systems for Substance Abuse Treatment: An International Conference.” The conference was funded by the US Institute of Peace (USIP), as well as by the US Agency for International Development (USAID), UNODC, WHO, the US Substance Abuse and Mental Health Services Administration, and the US National Institute on Drug Abuse. Participating countries included ten Middle Eastern/Eastern Mediterranean countries, selected European and African countries, and the United States. A central component of the meeting was a series of presentations by each of the country representatives describing the nature and extent of the substance use problems in each country, a description of their prevention and treatment infrastructure, and a discussion of country priorities for data and service development.

One of the most commonly noted service development needs reported in the 2005 Istanbul meeting was the absence of a trained workforce to provide treatment for substance use disorders. While some of the country representatives

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reported that there were physicians and nurses with expertise in the treatment of substance use disorders, there was virtually unanimous agreement that in all countries represented, there was an inadequate number of individuals trained to deliver non-medical, psychosocial addiction treatment services.

### Figure 1: Conference Group Photograph — Istanbul, Turkey

*Bosphorus in background. Photograph by Ali Kabas*

**ADDITION TREATMENT WORKFORCE DEVELOPMENT IN EGYPT**

At the beginning of the 21st century, the addiction treatment system in Egypt consisted of addiction services delivered in private and public treatment programs, as well as in the office practices of psychiatrists. However, in all of these settings, there was a severe shortage of counselors/therapists systematically trained to assess and treat individuals with alcohol and drug problems. With funding from the USAID, and through a memo of understanding between the Medical School at Kasr Al-Ainy (Cairo University) and the UCLA Department of Psychiatry, UCLA Integrated Substance Abuse Programs (ISAP) researchers and teachers and Egyptian colleagues developed an addiction system development program. Activities included implementation of the use of an Arabic-language Addiction Severity Index in Egyptian treatment centers, numerous clinical training workshops on cognitive behavioral therapy, motivational interviewing, and the Matrix Model behavioral treatment approaches, and workshops on addiction pharmacotherapies. Further, UCLA faculty worked with members of the Faculty of Medicine Cairo University (FMCU) on specific, targeted programs, including development of data collection and treatment services for addicted individuals in Egyptian prisons and the investigation of the relationship between drug use and infectious diseases in prisons.

In 2007, UCLA became the lead group for curriculum development for the UNODC Treatnet Program, a worldwide network of training centers in the area of substance use disorder treatment. One of the Treatment Centers was located
in Cairo, which was selected as the site for the initial Treatnet training session. The addiction training activities conducted by the Egyptian Treatnet trainers as part of the Treatnet Program, together with the ongoing UCLA training and technical assistance efforts described above, created a “critical mass” of addiction training activity in Cairo that has spurred a desire for a more formalized training program and a process for certifying professionals as addiction counselors. With the opening of the Kasr Al-Ainy Psychiatric Hospital in 2010 and an expansion of addiction treatment and teaching activities, the development of an addiction counselor training program under the auspices of Kasr Al-Ainy has provided the expertise and academic infrastructure for the development of such a training program.

THE KASR AL-AINY TRAINING PROGRAM FOR ADDICTION COUNSELORS

At the present time, there are no accredited addiction counselor training programs in the entire Middle East. Although ad hoc addiction training events periodically take place in the region by a variety of groups, including the UNODC Treatnet program, there are no educational programs to provide individuals with a career path into the addiction counseling field. As the health systems in the region build capacity to treat individuals with substance use disorders, there is an increasing need for a workforce to assist the MDs and nurses in the delivery of clinical care. Psychosocial treatment is the current best practice for treating individuals with stimulant use and cannabis use disorders and is a necessary component of treatment even when addiction medications are used. Consequently, the need for well-trained addiction counselors is a priority in developing health systems in the Middle East.

The foundation for the counselor training program is based on the ten-year partnership between FMCU and UCLA, and each group brings a unique set of credentials to the program. Kasr Al-Ainy is a major educational institution in Egypt and the entire Middle East region. Its psychiatric training program has developed a well-recognized cadre of experienced psychiatrists in the area of addiction treatment. The many members of the FMCU have passed the International Society of Addiction Medicine (ISAM) addiction specialty examination and many play leading roles in treatment facilities and addiction efforts in Egypt, as well as with WHO and UNODC in substance use issues in the Middle East region. The UCLA team has an extensive history of conducting international addiction research and providing technical assistance. The key members of the cooperative FMCU and UCLA team are listed below.

The content of the training program will draw heavily from the content of the Treatnet curriculum. The overarching professional development framework will follow the guidelines provided in the Center for Substance Abuse Treatnet (CSAT) Technical Assistance Publication (TAP) Series 21, entitled “Addiction Counseling Competencies: The Knowledge, Skills, and Attitudes of Professional Practice,” which provides a consensus review of the essential elements of

counselor knowledge. Although the Treatnet materials have been developed for an international audience, the specifications of the framework and specific legal/regulatory considerations for defining professional conduct will be adapted for professionals in Egypt. At present, the plan is for the training program to include 270 hours of didactic coursework, with supervised clinical experience of 2,000 hours. At present, efforts are underway to ensure that the course content and specifications are in compliance with international accreditation groups.

The first week-long training session of this new program was conducted in early June at Kasr Al-Ainy Psychiatric Hospital in Cairo. There were 42 attendees from Egypt. In addition, there were attendees from Palestine and Iraq. Participant feedback was excellent and the second week-long session is being scheduled for fall 2011. As news of this counselor training program has spread, expressions of interest have been made by health leaders from several other countries in the region about having counselor candidates from these countries come to Kasr Al-Ainy for training and/or having FMCU/UCLA faculty assist these countries in the development of their own training courses. There are currently plans underway for teams of professionals from Iraq and Palestine to participate in the future training activities and to use the Kasr Al-Ainy program as a major training resource in the development of their addiction treatment systems.

While the workforce development goals of this project are paramount, the training, technical assistance, and program development activities provide a superb context for a very positive and productive “people to people” opportunity. To date, over 20 US addiction experts and teachers have traveled to Cairo to contribute their expertise and work cooperatively with Egyptian and other Middle East colleagues. In the current wake of the Arab Spring revolutions, attitudes about how countries in this region will relate to the United States are mixed, and there is much uncertainty about the future of Egyptian-US relations. The activities surrounding the development of academic and training partnerships to build a needed portion of the Egyptian health system offers a superb opportunity for cooperative and mutually respectful relationships among Egyptian and US participants. To the extent that this partnership can be of assistance to others in the region, it offers an even larger forum for demonstrating that the context of constructive and meaningful workforce and system development efforts can promote positive human relations between US professionals and their peers in the Middle East region.

THE FMCU-UCLA COOPERATIVE TEAM

The FMCU team is led by the Director of Addiction Psychiatry, Tarek A. Gawad, MD, who is a recent past president of the International Society of Addiction Medicine (ISAM). Other key contributors to the program are Momtaz Abd El-Wahab, MD (Head of Psychiatry Department), Samir Abolmagd, MD (Professor, Department of Psychiatry), Maha Mobasher, MD (Professor, Department of Psychiatry), Salwa Erfan, MD (Professor, Department of Psychiatry), and Rania Mamdouh, MD (Lecturer, Department of Psychiatry).
The key UCLA participants include Richard Rawson, PhD, and Thomas Freese, PhD, both long-time addiction researchers and educators. Dr. Rawson has a 35-year career of addiction clinical work, research, and training and was principal investigator (PI) on the UNODC Treatnet Curriculum Development project. Dr. Freese has a 15-year history of clinical work, research, and training and is currently the PI of the Pacific Southwest Addiction Technology Transfer Center (PSATTC). Grace Kim from UCLA is organizing the training program and will oversee the process of developing accreditation for the program.
Male Infertility and Intracytoplasmic Sperm Injection (ICSI) in the Middle East

Marcia C. Inhorn

THE MALE INFERTILITY PROBLEM

Infertility is the inability to conceive after 12 months of regular, unprotected intercourse. This reproductive health problem affects more than 15% of all reproductive-aged couples worldwide. What is rarely recognized is that male infertility contributes to more than half of all of these cases. Male infertility involves four major categories of sperm defects, any one of which leads to a diagnosis of male infertility. These include low sperm count (oligozoospermia), poor sperm motility (asthenozoospermia), defects of sperm morphology (teratozoospermia), and total absence of sperm in the ejaculate (azoospermia). Azoospermia may be due to lack of sperm production (non-obstructive azoospermia) or blockages in sperm transport (obstructive azoospermia). These four types of male infertility account for about 40% of all cases of infertility in Western countries. However, in the Middle East, 60–90% of all cases presenting to in vitro fertilization (IVF) centers involve a diagnosis of male infertility, according to physician estimates. Moreover, non-obstructive azoospermia is highly prevalent in the Middle East, as are cases of severe oligoasthenozoospermia (i.e., very low sperm count and poor motility). Because of advances in the field of genetics, it is now known that a significant percentage of these kinds of severe cases are due to genetic abnormalities. In the Middle East, severe cases of male infertility tend to run in families, and are probably related to intergenerational patterns of consanguineous (cousin) marriage, which increase the chances for genetic mutations, including microdeletions of the Y chromosome linked to male infertility.

In short, male infertility is especially common in the Middle East and quite common elsewhere, but this is not popularly known. Male infertility has been called a “neglected” reproductive health problem, and one that remains deeply hidden, including in the West. Studies in the United States have shown male infertility to be among the most stigmatizing of all male health conditions. The depth of this stigmatization may be even deeper in non-Western settings such as the Middle East, casting a permanent shadow on a man's community standing. Such stigmatization is clearly related to issues of sexuality. Male infertility is popularly, although usually mistakenly, conflated with impotency (i.e., erectile dysfunction), as both disrupt a man’s ability to impregnate a woman and to prove one’s virility, paternity, and manhood. This “fertility-virility linkage” means that men who are infertile are assumed to be impotent, even though most are not. Furthermore, because male infertility tends to be deeply hidden, Middle Eastern women tend to bear responsibility — even if misattributed — for failures of reproduction.

1. Material for this article is excerpted from the author’s new book, The New Arab Man: Emergent Masculinities, Technologies, and Islam in the Middle East, to be released by Princeton University Press in March 2012.
THE ICSI SOLUTION

Because male infertility is often related to genetic defects of sperm production, it is recalcitrant to prevention, and among the most difficult forms of infertility to treat. Male infertility is generally not a condition that can be “cured” per se. Instead, it represents a chronic reproductive health condition for millions of men worldwide.

In the Middle East, the advent of laboratory-based semen analysis did not become widespread until the 1970s, nor did it become fully reliable according to World Health Organization standards until much later. Furthermore, until the early 1990s in the West, the only known solution to male infertility was donor insemination (DI), the oldest of the reproductive technologies, but one that is religiously prohibited across most of the Muslim world. The introduction of intracytoplasmic sperm injection (ICSI) — pronounced “ick-see” — in Belgium in 1992 was a watershed event. A variant of IVF, ICSI solves the problem of male infertility in a way that IVF cannot. With standard IVF, spermatozoa are removed from a man’s body through masturbation, and oocytes are surgically removed from a woman’s ovaries following hormonal stimulation. Once these male and female gametes are retrieved, they are introduced to each other in a petri dish in an IVF laboratory, in the hopes of fertilization. However, “weak” sperm (i.e., low numbers, poor movement, misshapen) are poor fertilizers. Through “micromanipulation” of otherwise infertile sperm under a high-powered microscope, they can be injected directly into human oocytes, effectively “aiding” fertilization (Figure 1). As long as one viable spermatozoon can be extracted from an infertile man’s body, it can be “ICSI-injected” into an oocyte, leading to the potential creation of a human embryo. With ICSI, then, otherwise “sterile” men can father biogenetic offspring. This includes azoospermic men, who produce no sperm in their ejaculate and must therefore have their testicles painfully aspirated or biopsied in the search for sperm. In short, ICSI gives infertile men a greater chance of producing a “take-home baby.”

The coming of ICSI to the Middle East in 1994, where it was introduced in an IVF clinic in Cairo, has led to a virtual “coming out” of male infertility across the region, as men acknowledge their infertility and seek the ICSI solution. The coming of this new “hope technology” has repaired diminished masculinity in men who were once silently suffering
from their infertility. Furthermore, ICSI is being used in the Middle East and elsewhere as the assisted reproductive technology “of choice,” effectively replacing its predecessor IVF. Basically, IVF leaves fertilization “up to chance,” whereas ICSI does not. Thus, ICSI provides a more guaranteed way of creating “the elusive embryo.” With ICSI, human fertilization is increasingly aided and abetted by human embryologists working in IVF laboratories around the world.

**Figure 2: ICSI Being Performed by an Embryologist in Beirut, Lebanon**

ICSI may be a “breakthrough” technology, but it is by no means a panacea. For one thing, the precisely timed collection of semen can produce deep anxiety and even impotence, but is imperative for all ICSI procedures. Second, some men produce no spermatozoa whatsoever, eliminating ICSI as an option. Third, ICSI sometimes does not succeed, leading to endless rounds of fruitless repetition among some couples. Fourth, ICSI involves a grueling surgical procedure for women as it is highly dependent upon the complicated stimulation and extraction of healthy oocytes from women’s bodies. Whereas the fecundity of older men can often be enhanced through ICSI, women’s fertility is highly age sensitive, with oocyte quality declining at later stages of the reproductive life cycle. In short, older women may “age out” of ICSI, causing highly gendered, life-course disruptions surrounding women’s “biological clocks.” Fifth, men may “arrive” at ICSI after years of other failed treatment options. ICSI is expensive, usually costing $2,000-6,000 per cycle in the Middle East. Thus, it is often deemed a “last resort,” especially for men without adequate financial resources. Finally, when it does succeed, ICSI may be perpetuating genetic defects into future generations, through mutations of the Y chromosome and other inherited disorders that may be passed by ICSI to male offspring. The ethics of passing genetic mutations to children has been an increasing cause for concern.

Recent research suggests that male reproductive tract abnormalities — including undescended testicles, hypospadias (a birth defect in which the opening of the urethra is on the underside, rather than at the end, of the penis), and poor semen quality — are more prevalent in male children conceived through assisted reproduction, regardless of genetic defects in their fathers’ sperm. This is because assisted reproduction is associated with the use of artificial hormones,
higher rates of prematurity, low birthweight, and multiple gestation, which are indirect risk factors for the development of male genital malformations (from the disruption of gonadal development during fetal life). ICSI, in particular, increases the risk for hypospadias, which may require surgical repair during infancy.

Despite these challenges, nearly 5 million “test-tube babies” have now been born around the world, nearly half-a-million of whom are the result of ICSI. ICSI is a “hope technology,” creating the “only hope” for most infertile men, especially those with serious cases. The emergence of ICSI in the Middle Eastern region in the mid-1990s led to an immediate boom in demand for this technology — a demand that has never waned. IVF clinics today are filled with ICSI-seeking couples. ICSI is by far the most common assisted reproductive technology now undertaken in the Middle East. As one infertile Lebanese man put it, “I will try again and again and again. I will never lose hope.” Or, as another concluded, “I will try until I die.”
Community-based Health Initiatives: Healthy Villages in Jordan

Reham Jbour

HEALTH FOR ALL — FIRST PRINCIPLES TO ACTION

The International Conference on Primary Health Care was held in Almaty, Kazakhstan in 1978. Nearly all of the members of the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) were in attendance. The conference culminated in the issuing of the Almaty Declaration — a major landmark in the field of public health.

The Almaty Declaration identified primary health care (PHC) as the key to achieving Health for All (HFA). Through this document, the Conference reaffirmed health as a fundamental human right and that the attainment of the highest possible level of health is a world-wide social goal whose realization requires action by various economic and social sectors. Importantly, the Almaty Declaration stated that the people have a right and a duty to participate individually and collectively in the planning and implementation of health care.

At the 20th anniversary meeting of the Conference in Almaty, Dr. Halfdan Mahler, Director General Emeritus of the WHO, emphasized the importance of the participation of the community:

Health is not a commodity that is given. It must be generated from within. Health action should not be imposed from the outside, foreign to the people; it must be a response of the communities to problems they perceive, supported by an adequate infrastructure. This is the essence of the filtering inwards process of primary health care.

Three years after the Almaty Declaration, many countries began to create health models aimed at realizing the overarching objective of Health for All. However, they encountered many obstacles and challenges, notably:

- Insufficient awareness of the relationship between the health situation and comprehensive development
- Weakness at the administrative level in implementing and applying strategies to achieve HFA

These problems stemmed from three sources:

1. The lack of human and material resources
2. The lack of community participation
3. The lack of cooperation and coordination between different sectors

Both because and in spite of these problems, over the years numerous programs have been established throughout the world which aim at improving the quality of life through community-based initiatives. There are four basic types of such programs:

1. healthy villages
2. healthy cities
3. basic development needs
4. women empowerment in health and development

Whatever the differences between them, these types of programs have several common characteristics. First and foremost is that they are based on a commitment to health. Second, they are intended to generate intersectoral action. Third, they aim to stimulate political decision-making to support Health for All. And fourth, they emphasize community.

THE HEALTHY VILLAGES PROGRAM IN JORDAN

Origins and Objectives

With the technical and financial support of the WHO, the Ministry of Health introduced the Healthy Villages program to Jordan in 1996. Initially, the program was applied in two villages. Two years later, it was expanded to 12 villages all over the Kingdom. By the end of 2010, the number of Healthy Villages had grown to 56.

The Healthy Villages Program in Jordan is a joint effort between the Ministry of Health in collaboration with international organizations such as WHO and UNICEF. The program aims at developing local communities in disadvantaged areas of the Kingdom. It also aims at improving the quality of life on all levels. The program depends heavily on the participation of members of the community and their involvement in the development process, starting with determining their needs to implementing and then evaluating its results in order to reach comprehensive, sustainable development.

The Healthy Villages Program in Jordan has two main objectives: 1) to support the state's efforts in developing rural areas and 2) to consolidate the principle of self-reliance for both men and women. More specifically, the program aims to:

- Strengthen primary health care in rural areas
- Raise people's health awareness
- Establish a data center in each village relating to health, population, development, and service issues
- Establish a community-based school
- Making available income-generating loans to families with the aim of improving their financial, social, and health status
Activities and Achievements

Since its inception, the Healthy Villages Program has had many notable accomplishments, including:

1. Inclusion in the program of 50 villages representing all governorates of the Kingdom.
2. Implementation of field surveys that investigate the basic development needs of the families out priorities.
3. Establishment of educational centers for children, which provide games, computers, equipment, and supplies for cultural centers in villages.
4. Providing communities with materials and equipment such as computers and office furniture for information centers; Food, bags and containers for waste, and stationery for a community school.
5. Building the capacity of community leaders and women for the success of the overall development process by holding training workshops of various kinds:
   - Concepts related to communication skills, development, planning, project implementation, negotiation, and problem-solving and decision-making. To date, these workshops have benefitted 1,634 trainees, 40% of whom are women.
   - Small business administration workshops have benefitted 359 trainees, with women constituting 55% of trainees.
   - Female empowerment workshops have reached 214 trainees.
   - Community schools workshops have trained 353 people, 85% of whom are women.
6. Contributing to the reduction of problems of poverty and unemployment through the following:
   - In accordance with the agreement signed between the Ministry of Health and the Ministry of Agriculture on 11/4/2002, small income-generating loans were offered to 371 poor families (with women constituting 51% of the beneficiaries). The loans totalled 404,827 Jordanian dinars.
   - Vocational and craftsmanship training courses for youth and unemployed were held in order to provide them with work opportunities. As of the end of 2010, 1,250 people had benefited from these courses, with women constituting 95% of the beneficiaries.
7. Zain mobile clinic dispatched every three months.
8. Youth empowerment activities in the areas of politics and the economy, in collaboration with the Center for Leadership Development / Higher Council for Youth.
9. Implementation of supervisory visits and field assessments every three months for the villages.
Table 1. Summary of the Small Loan Project (as of end 2010)

<table>
<thead>
<tr>
<th>Project Activities</th>
<th>Value of Loans</th>
<th>Percentages of Loans</th>
<th>Value of Borrowers</th>
<th>Percentages of Borrowers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td><strong>Animal Production</strong></td>
<td></td>
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<tr>
<td>Sheep rearing</td>
<td>262,775</td>
<td>64%</td>
<td>135,405</td>
<td>12,737</td>
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<tr>
<td>Cows rearing</td>
<td>15,270</td>
<td>4%</td>
<td>5,750</td>
<td>9,520</td>
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<tr>
<td>Rabbits</td>
<td>8,340</td>
<td>2%</td>
<td>5,340</td>
<td>3,000</td>
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<tr>
<td>Bees</td>
<td>23,400</td>
<td>5%</td>
<td>16,650</td>
<td>6,750</td>
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<tr>
<td>Chicken</td>
<td>19,000</td>
<td>4%</td>
<td>10,750</td>
<td>8,250</td>
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<tr>
<td><strong>Total</strong></td>
<td>328,785</td>
<td>80%</td>
<td>173,895</td>
<td>154,890</td>
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<td><strong>Plant Production</strong></td>
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<tr>
<td>Reclamation project and trees planting</td>
<td>6,250</td>
<td>1%</td>
<td>4,750</td>
<td>1,500</td>
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<tr>
<td>Drip irrigation system</td>
<td>4,000</td>
<td>1%</td>
<td>1,500</td>
<td>2,500</td>
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<tr>
<td>Medical and herbal plants</td>
<td>9,500</td>
<td>2%</td>
<td>1,500</td>
<td>8,000</td>
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<tr>
<td>Seedling planting</td>
<td>3,750</td>
<td>1%</td>
<td>3,000</td>
<td>750</td>
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<tr>
<td>Winter crops planting</td>
<td>3,750</td>
<td>1%</td>
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<td>1,500</td>
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<tr>
<td>Fertilizers</td>
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<td><strong>Food Production</strong></td>
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<tr>
<td>Dairy products</td>
<td>15,250</td>
<td>3%</td>
<td>6,000</td>
<td>9,250</td>
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<tr>
<td>Manufacturing and processing of vegetable products</td>
<td>3,000</td>
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<td>3,000</td>
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<td><strong>Total</strong></td>
<td>18,250</td>
<td>4%</td>
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<td>12,250</td>
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<td><strong>Rural Development</strong></td>
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<td>Grocers</td>
<td>23,862.500</td>
<td>7%</td>
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<td>Grocer of vegetable and fruit</td>
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<td>1,500</td>
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<td>Shakers</td>
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<td>10%</td>
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<td>9,292.5</td>
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<td><strong>Grand Total</strong></td>
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<td>100%</td>
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<td>190,682.5</td>
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