

**WTO RECOURSE FOR CALIFORNIA FARM IRRIGATION SUBSIDIES:  
UNDERMARKET WATER PRICING AS FOREGONE REVENUE**

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ABSTRACT

*There are many competing demands for surface freshwater. Farms look to it as an irrigation source, cities rely on it for municipal drinking water, and fisheries depend on its for instream flow. When governments subsidize the costs of diverting and delivering surface freshwater for irrigation in domestic agricultural production, such subsidization often results in tiered pricing for water delivery. With tiered pricing, agricultural producers pay the government a lower price for water while water agencies (who provide drinking water) and fishery agencies (that secure instream flow) must pay a higher price. The tiered pricing that often results from farm water subsidies has been subject to criticism on economic and environmental grounds, for distorting the water marketplace in a manner that encourages wasteful irrigation and leaves insufficient instream flow to sustain fisheries.*

*In 1994, the World Trade Organization Agreement on Subsidies and Countervailing Measures (WTO Subsidies Agreement) was signed. Among other things, the WTO Subsidies Agreement provides that one WTO member country may be entitled to impose countervailing measures (e.g. tariffs) against another WTO member country if it can be established that a country made a "financial contribution" which confers a "benefit" that is "specific to certain enterprises." The WTO Subsidies Agreement further provides that "government revenue otherwise due that is forgone or not collected" (foregone revenue) can qualify as a "financial contribution." This article assesses the potential applicability of the WTO Subsidies Agreement's "foregone revenue" provisions to farm irrigation pricing under the Central Valley Project (CVP) operated in California by the federal government of the United States of America (United States). The CVP is largest federal water project in the country, and the vast majority of CVP water is sold by the United States government to large agricultural operations in California's San Joaquin Valley and Sacramento Valley (often to grow water intensive crops such as alfalfa, cotton and rice). The likely WTO member countries to bring such a claim against the United States for CVP farm irrigation subsidies would be countries that grow/export the same crops that benefit from the CVP (such as Brasil who is a major producer/exporter of cotton).*

**Key words:** subsidy; irrigation; WTO (World Trade Organization)

**I. The Real Price for Subsidized Farm Irrigation**

In the arid west of the United States of America (United States), an historical constraint and obstacle to settlement has been scarce freshwater resources. In many areas of the western United States, there is not adequate rainfall to support dry farming. Recognizing that the creation of large scale works for the storage and delivery of water was necessary to entice citizens to move west and farm land, in 1902 the Reclamation Act was enacted. The 1902 Reclamation Act created the United States Reclamation Service, which was renamed the United States Bureau of Reclamation (Bureau of Reclamation) a few decades later.

The Central Valley Project (CVP) in California is the largest irrigation water supply project constructed and operated by the Bureau of Reclamation. Construction of the CVP began in the 1940s. Today, the CVP includes 20 water storage reservoirs (dams) with a combined storage capacity of approximately 11 million acre feet (AF) and approximately 500 miles of canals and aqueducts. (Delta Vision Task Force). Although a small percentage of CVP water is delivered to municipal water agencies for drinking water and industrial uses, the vast majority of CVP water is delivered to contractors for agricultural irrigation. Most of the CVP irrigation water is provided to large-scale agricultural operations in the San Joaquin Valley in particular and to a lesser extent the Sacramento Valley. Collectively, the San Joaquin Valley and the Sacramento Valley comprise what is commonly referred to as California's Central Valley, which stretches from the city of Bakersfield in the south to the city of Redding in the north.

In addition to agricultural and municipal uses, some CVP water is also left (or placed) instream, to provide habitat to sustain fisheries such as salmon, steelhead trout and smelt. This instream use is often accomplished through purchases from the CVP of water via the Environmental Water Account (EWA), a governmental entity established in the 1990s to help restore declining fisheries. (Environmental Working Group, 2004).

The Bureau of Reclamation establishes the price for delivery of CVP irrigation water through longterm water delivery contracts. The contract prices set by the Bureau of Reclamation for delivery of irrigation water have been and remain well below the revenue necessary for the Bureau of Reclamation to recoup its initial construction costs or the even cover ongoing operation and maintenance (O&M) costs. (Environmental Working Group, 2004). Moreover, the price paid by Central Valley farmers for CVP water is much less than the price paid by California cities for CVP water, much less than the price paid by EWA for water to remain instream. (Environmental Working Group, 2004). The CVP's tiered pricing has enabled California farms to maintain a steady supply of relatively inexpensive irrigation from the federal government, and this in turn has facilitated the planting of such water intensive crops as alfalfa, cotton and rice in the Central Valley.

The CVP's subsidization of irrigation for Central Valley farms has been the subject of domestic criticism (and attempts at domestic reform) for several decades. An international trade dimension is now also emerging in the debate over CVP irrigation subsidies. The 1994 conclusion of the Uruguay Round negotiations by the General Agreement on Tariffs and Trade (GATT) resulted in the creation of the World Trade Organization (WTO) and the adoption of the WTO Agreement on Subsidies and Countervailing Measures (WTO Subsidies Agreement). The WTO Subsidies Agreement establishes what is referred to as a "traffic light" system, with permitted subsidies (green light), prohibited subsidies (red light) and actionable subsidies (amber light). Amber light/actionable subsidies may be lawfully maintained by a WTO member country, but other WTO member countries may be entitled to impose "countervailing" measures if injury can be established. Such countervailing measures might include equivalent tariffs imposed on the import of goods from the country maintaining the actionable subsidy (tariffs equivalent to offset the injury caused by the subsidy). Under the WTO Subsidies Agreement, the category of actionable subsidies includes "government revenue otherwise due that is foregone or not collected." Thus, "foregone revenue" by a WTO member government may qualify as an actionable subsidy exposing such country to the imposition of countervailing tariffs by other injured WTO member countries.

The conceptual question considered in this paper is whether the CVP's undermarket pricing for irrigation water to California farms may fall within the scope of the "foregone revenue" provisions of the WTO Subsidies Agreement. Responding to this question requires close evaluation of CVP water pricing, the California water marketplace, and the terms of the WTO Subsidies Agreement. The purpose of this paper is not to provide a definitive answer to the question posed, but rather to better delineate the issues that may emerge as pivotal in this assessment.

## **II. Central Valley Project (CVP) Water Delivery Contracts in California**

In 2008, the Governor of California's Delta Vision Task Force released its report *CVP Financing and Repayment*. This report began by setting the geographic and hydrological context, noting:

California's Central Valley floor is a 400 mile long alluvial fan. Water captured in the northern half of the Valley drains into the Sacramento River and its tributaries,

and water captured in the southern half of the valley drains into the San Joaquin and Tule Rivers and their respective tributaries. The Sacramento and San Joaquin Rivers eventually converge into the Sacramento-San Joaquin Delta (Delta) before reaching the Pacific Ocean at the Golden Gate Bridge. Precipitation varies significantly from north to south. The north end of the Valley receives about two thirds of the Valley precipitation and is prone to severe flooding, while the southern end receives only one third of the precipitation (and is prone to drought).” (Delta Vision Task Force, 2008).

The idea behind the CVP, initially authorized by the United States Congress and United States President Franklin Roosevelt in 1935, was to construct and install new water infrastructure (dams, reservoirs, canals) that would simultaneously reduce flooding in the northern end of the valley and create new irrigation supplies for agriculture in the southern end of the valley. Main components of CVP water infrastructure include Shasta Dam on the Sacramento River, Friant Dam on the San Joaquin River, the Delta Mendota Canal, the Madera Canal, the Friant Kern Canal, the Delta Cross Channel and the Tracy Pumping Plant.

The federal Reclamation Project Act of 1939 (RPA) set forth the initial authority and structure for the Bureau of Reclamation to recover its investment in constructing, operating and maintaining authorized water projects. The RPA provided for the Bureau of Reclamation to enter into longterm “water service contracts” (often for 40 years) for projects such as the CVP that provided multiple facilities benefiting many contractors. Under the RPA, costs are allocated to and recovered from beneficiaries based on the amount of water received as measures in “acre feet” (AF) of water. (Delta Vision Task Force, 2008).

The prices charged to Central Valley farmers by the Bureau of Reclamation pursuant to RPA water delivery contracts, however, fell far short of such cost recovery. The reasons for this shortfall were noted in 2005 by Nathalie Bernasconi-Osterwalder of the Center for International Environmental Law (CIEL). In her chapter in the Oxford University Press book Fresh Water and International Economic Law, Bernasconi-Osterwalder documented the repayment requirements for Bureau of Reclamation irrigation projects throughout the American west, explaining:

In the United States, the federal government is subsidizing irrigation systems in several ways. It incorporated a two-stage subsidy in the way it sets water prices for irrigation water. First, the contractual water prices were based on an irrigator's ability to pay, rather than on the actual costs of supplying the water. Secondly, no interest was charged on the loans to fund construction costs. Researchers calculated a water subsidy of nearly \$100 million for several projects alone. The annual irrigation subsidies for the United States from such underpricing have been estimated at between \$2 billion and \$2.5 billion. (Bernasconi-Osterwalder, 2005).

Bernasconi-Osterwalder, with special reference to the CVP, continues:

Because water is inexpensive or free, farmers have no incentive to use water sparingly. Instead, they are encouraged to use inefficient technology, such as ineffective sprinklers, to irrigate croplands, or to water crops at the time of day when the temperatures are highest and much of the water is lost to evaporation. Moreover, by subsidizing irrigation water, governments sponsor the planting of water demanding crops. For example, three of the main crop grown in California's Central Valley, with a desert-like climate, are water intensive, alfalfa, cotton and rice, although these crops require a much moister climate. (Bernasconi-Osterwalder, 2005).

In response to criticisms regarding the lax repayment/cost recovery terms in the CVP water delivery contracts entered into under the RPA, the federal Central Valley Improvement Act (CVPIA) was enacted in 1992. Although CVPIA resulted in certain changes to the terms of renewed CVP water delivery contracts, such as reduced duration (down to 25 years) and periodic price adjustments, research indicates that post-CVPIA

contracts for CVP irrigation water are still considerably below market. For instance, in 2004 the Environmental Working Group published its *California Water Subsidies* Report, which found:

[D]epending on how the market value of the water is defined. CVP farmers are receiving between \$60 million and \$416 million in water subsidies each year. The first figure [\$60 million] represents the subsidy if the water is priced at the Bureau of Reclamation's so-called "full cost rate," which in practice is much less than the actual full cost of delivering water to recipients. The higher figure [\$416 million] comes from comparing the average price for CVP water to the estimated costs of replacement water supplies for proposed dams and reservoirs on the San Joaquin River. An intermediate figure is \$305 million a year, reflecting the difference between the average CVP rate and the price paid for CVP water by the Environmental Water Account, a state-federal joint agency to restore fish and wildlife habitat in the Bay Delta.

No matter what market value is used for comparison, the total subsidy to CVP farmer exceeds the actual amount they paid in 2002, about \$48 million. That means CVP water users are getting a minimum discount of 55 percent below market value, ranging up to almost 90 percent, for the water they receive. (Environmental Working Group, 2004).

The 2008 report by the Delta Vision Task Force (noted above) also concluded that Central Valley farmers, particularly those in the San Joaquin Valley, had failed to come anywhere close to repaying or reimbursing their share of CVP costs:

The CVP provides project water to both irrigation and M&I [municipal and industrial] contractors in the San Joaquin Valley. Current San Joaquin Valley capital repayment responsibilities are \$993.2 million, which represents over 77 percent of the total [CVP] capital costs of nearly \$1.3 billion. Irrigators were responsible for \$955 million or 96.2 percent of the reimbursable total and M&I contractors are responsible for the remaining \$38.1 million.

As of September 2006, the San Joaquin Valley contractors had repaid \$193.8 million or 19.6 percent of total allocated costs, leaving net capital costs of \$797.7 million to be repaid. Irrigation contractors had repaid \$184.7 million (19.3) percent, leaving \$769.7 million unpaid. (Delta Vision Task Force, 2008).

Irrigation subsidies are sometimes defined using the "cost recovery" method. This method defines an irrigation subsidy as government expenditures that benefit irrigating farmers, net of the revenues from water chargers paid by the irrigators to the government. This calculation of irrigation subsidies under the cost recovery should take account that construction of large-scale water infrastructure projects (like the CVP) can take several years to complete so the amount of the underlying government expenditure (used to calculate the extent of subsidies) may not be a fixed amount over time. (Bernasconi-Osterwalder).

The fact that the CVP's reservoirs, pumps and canals were constructed in phases over many decades, and that the prices charged by the Bureau of Reclamation under CVP water delivery contracts have undergone changes over time, adds a layer of complexity to the calculation of CVP irrigation subsidies. As reflected in the research and analysis undertaken by the Environmental Working Group in 2004 and the Delta Vision Task Force in 2008, however, the complexity of this calculation is not insurmountable, particularly in the light of the the extensive CVP cost and pricing information that the Bureau of Reclamation is required to make available to the public. (Bernasconi-Osterwalder, 2005) (Kramer, 2003) (Sur, Dina Umali-Deininger and Dinar, 2002).

When one relies on the costs-recovery methodology, or whether one relies on a comparative evaluation of pricing with other markets for water (such as the prices paid by municipalities or the Environmental Water Account), there appears to be strong evidentiary support for the conclusion that the CVP's current pricing of

irrigation deliveries to California farms meets standard notions of a subsidy, and that this irrigation subsidy is quite substantial in monetary terms.

### III. World Trade Organization (WTO) Rules on Subsidies

#### A. Foregone Revenue Provisions of 1994 WTO Subsidies Agreement

As a result of the conclusion of the Uruguay Round of negotiations, in 1994 the World Trade Organization (WTO) became the successor entity to the General Agreement on Tariffs and Trade (GATT). Prior to 1994, the term GATT referred both to the underlying GATT treaty (signed in 1947) as well as the ad hoc administrative apparatus that developed to implement and ensure compliance with the GATT treaty. At the time the WTO was established in 1994, the members to GATT (including the United States) also entered into a series of other trade-related agreements, including the WTO Subsidies Agreement. The WTO Subsidies Agreement builds on traditional notions of subsidies, such as the cost recovery methodology noted above, but also sets forth its own unique set of terminology, requirements, exemptions and remedies.

In terms of general structure, the WTO Subsidies Agreement is based on what is referred to as a “traffic light” system with three basic categories of subsidies. The first category is “green light” subsidies which are permitted. The second category is “red light” subsidies which are prohibited (meaning an action can be brought before the WTO to compel a member to end/discontinue the subsidy). For example, most direct export subsidies are prohibited. The third category is “amber light” subsidies which are “actionable”. “Amber light” or “actionable” subsidies can be maintained by a WTO member country (such as the United States), but other WTO member countries may be entitled to impose “countervailing” measures against the country that maintains an “actionable” subsidy if it can be established that the subsidy caused “injury”. Such countervailing measures might include equivalent tariffs imposed on the import of goods from the country maintaining the actionable subsidy (tariffs equivalent to offset the injury caused by the subsidy). (Kennedy, 2009).

Under WTO Subsidies Agreement, the category of actionable subsidies includes domestic subsidies that are not directly tied to exports. Articles 1, 2 and 14 of the WTO Subsidies Agreement provides that such domestic subsidies exist when the following conditions are present: “(i) a financial contribution is made by a government or any public body within the territory of Member (ii) which establishes a benefit (iii) that is specific to certain enterprises.” Article I of the WTO Subsidies Agreement then identifies four categories of “financial contributions”: (a) a direct transfer of funds or potential direct transfers of funds or liabilities; (b) government revenue otherwise due that is foregone or not collected; (c) government provision of goods or services other than general infrastructure; (d) government purchase of goods.”(Bernasconi-Osterwalder, 2005).

In light of the investigation and findings of the 2004 Environmental Working Group report and the 2008 Delta Vision Task Force report, there is ample evidence to support the claim that CVP irrigation pricing is not set at levels that enable the Bureau of Reclamation to recoup its construction or operational costs, and that such “foregone revenue” in CVP pricing provides a “good or service” that is of benefit to California farms that receive irrigation at these undermarket prices. Before CVP irrigation pricing is determined to be an actionable subsidy per WTO rules, however, there are additional questions that may still need to be resolved.

#### B. Do CVP Farm Irrigation Subsidies Qualify as Foregone Revenue?

##### 1. Revenue Otherwise Due

Per Article 1 of the WTO Subsidies Agreement, one of the categories of financial contributions that may qualify as an actionable domestic subsidy is “government *revenue otherwise due* that is *foregone* or not collected.” (italics added.) This raises the question of whether “full cost/actual cost” or “market” pricing of CVP irrigation water delivered by the Bureau of Reclamation should be viewed as revenue “otherwise due” that has been “forgone” or “not collected” based on the reduced pricing in CVP water delivery contracts.

The text of the WTO Subsidies Agreement does not provide any further clarification of what the phrase “revenue otherwise due” means, but this question was addressed by the WTO Appellate Body in its 2002 Report

in *United States – Tax Treatment for Foreign Sales Corporation (WTO Appellate Body FSC Report)*. This case involved a challenge by the European Communities against the United States policy of non-taxation of income earned through exports by entities recognized under United States law as Foreign Sales Corporations. In the *WTO Appellate Body FSC Report*, the narrower and more formalist construction of “revenue otherwise due” proposed by the United States was rejected. Instead, the WTO Appellate Body held:

Under Article 1.1(a)(1)(ii) [of the WTO Subsidies Agreement] a ‘financial contribution’ does not arise simply because a government does not raise revenue if could have raised. It is true that, from a fiscal perspective, where a government chooses not to tax certain income, no revenue is ‘due’ on that income. However, although a government might, in a sense, be said to “forego” revenue in this situation, this alone gives no indication as to whether the revenue foregone was ‘otherwise due.’ In other words, the mere fact that revenues are not ‘due’ from a fiscal perspective does not determine that the revenues are or are not ‘otherwise due’ within the meaning of Article 1.1(a)(1)(ii) of the [WTO Subsidies Agreement].”

...

To give meaning and effect to Article 1.1 of the [WTO Subsidies Agreement], our examination as to whether there is revenue foregone that is ‘otherwise due’ must be based on actual substantive realities and not be restricted to pure formalism...[A] government could opt to bestow financial contributions in the form of fiscal incentives simply by modulating the ‘outer boundary’ of its ‘tax jurisdiction’ or by manipulating the definition of the tax base to accommodate any ‘exclusion’ or ‘exemption’ or ‘exception’ it desired, so that there could never be a foregoing of revenue ‘otherwise due.’ This would have the effect of reducing paragraph (ii) of Article 1.1(a)(1) of the [WTO Subsidies Agreement] to ‘redundancy and inutility’ and cannot be the appropriate implication to draw...such as approach would eviscerate the subsidies disciplines in the [WTO Subsidies Agreement].

...

[T]he normative benchmark for determining whether revenue foregone is otherwise due must allow a comparison of the fiscal treatment of comparable income, in the hands of taxpayers in similar situations. (*WTO Appellate Body FSC Decision*, 2002)

To the extent the United States attempted to counter a WTO challenge to CVP irrigation pricing on the grounds that additional revenue from irrigators is not “otherwise due” because the Bureau of Reclamation has not adopted policies (or entered into water delivery contracts) that require the payment of such additional revenues, this more narrow formalistic line of reasoning would counter to the approach endorsed by the *WTO Appellate Body FSC Report*. If the approach employed by the *WTO Appellate Body FSC Report* is followed in the context of challenge to CVP irrigation pricing, the focus would be on the “substantive realities” of the CVP undermarket pricing, which presumably would look more to the types of considerations and evidence highlighted in the 2004 Environmental Working Group Report and the 2008 Delta Vision Task Force Report. That is, in the case of CVP irrigation pricing, the pertinent “substantive realities” are likely to include the extent of unreimbursed CVP construction/operational costs and the comparatively high cost for non-farming parties (such as cities and the Environmental Water Account) to acquire CVP water vis-a-vis the comparatively low cost CVP water is made available for farms.

The focus on the market price for water to evaluate CVP irrigation subsidies for WTO compliance would also be in line with the 1999 WTO Appellate Body Report on *Canada – Measures Affecting the Export of Civilian Aircraft*. (*WTO Appellate Body Aircraft Report*). In this decision, which involved a challenge to Canada's aircraft industry subsidies (but did not directly address the question of ‘revenue otherwise due’), the WTO Appellate Body ruled that the existence of a domestic “benefit” provide by the government can often be determined by comparison with the marketplace, that is, on the basis of the terms a recipient would have received the goods or services in question on the open market. (Bernasconi-Osterwalder, 2005). This approach is consistent with the

method of subsidy analysis used in the 2004 Environmental Working Group Report to evaluate CVP irrigation pricing.

## 2. Specificity Requirement

As noted above, one of the elements of an actionable subsidy under the WTO Subsidies Agreement is that it must be “specific to certain enterprises.” In the context of the CVP, the question is therefore whether the Bureau of Reclamation’s undermarket pricing for irrigation to Central Valley farms in water delivery contracts satisfies this “specificity” requirement.

Bernasconi-Osterwalder provides a useful framework for considering the specificity element:

The question raised in the context of agricultural subsidies is whether the specificity requirement is to be construed broadly or narrowly. Under a broad view, any agricultural subsidy would have to be considered specific by the mere fact that it is sector-specific. Under a narrower approach, however, agricultural subsidies, such as irrigation subsidies, would not necessarily qualify as specific just because they concern one sector. In the latter case, one could still argue that the subsidized irrigation schemes are specific because they are limited to farmers within a designated geographical region. (Bernasconi-Osterwalder, 2005).

There may be two ways in which CVP irrigation pricing contain the necessary specificity under the WTO Subsidies Agreement. First, geographically, CVP irrigation subsidies are only provided to California farms located in the Sacramento Valley and San Joaquin Valley, so such subsidies would appear to be specific in terms of the locations where such water may be delivered and used. Second, CVP’s undermarket irrigation pricing terms are specific to water used in farm irrigation, which is to say in the agricultural sector. There are different, more expensive CVP pricing terms for municipal water or water purchased by the Environmental Water Account for instream fisheries. The CVP irrigation pricing therefore appears to be specific to a particular economic sector (provided that agriculture/farming is recognized as a particular sector).

## 3. General Infrastructure Exemption

Article 1 of the WTO Subsidies Agreement provides that the government’s delivery of good and services may be actionable so long as they are not “general infrastructure.” The Bureau of Reclamation’s provision of undermarket CVP irrigation to California farms is arguably a “service” and presumably water constitutes a “good” given that it is an input in crop production, but what remains less clear is whether the delivery of CVP water for farm irrigation could properly be characterized as “general infrastructure.”

Although the WTO Subsidies Agreement does not provide any further elaboration on what constitutes “general infrastructure”, the 1994 WTO Agreement on Agriculture offers some potential guidance. More specifically, Annex 2(g) of the WTO Agreement on Agriculture provides a list of “general services” offered by the government that are outside the scope of subsidy discipline provisions in the WTO Agreement on Agriculture. The WTO Agreement on Agriculture’s definition of its “general services” exemption might suggest the potential scope and parameters of the WTO Subsidies Agreement’s definition of its “general infrastructure” exemption. Annex 2(g) of the WTO Agreement on Agriculture provides in pertinent part:

General Services...Policies in this category involve expenditures (or revenue foregone) in relation to programmes which provide **services or benefits to agriculture** or the rural community...Such programmes include...(g) **infrastructural services**, including: electricity reticulation, roads and other means of transport, market and port facilities, **water supply facilities, dams** and drainage schemes...In all cases the expenditure shall be directed to the provision or **construction** of the capital works **only...It shall not include subsidies to inputs or operating costs, or preferential user charges.** (bold added.).

When applied to CVP irrigation subsidies, Annex 2(g)'s definition of "general services" does not point to a straightforward determination. On the one hand, Annex 2(g)'s specific reference to "water supply facilities" and "dams" initially suggests that the type of water infrastructure included in the CVP (e.g. dams, canals and pumps) may fall within the "general services" exemption. Yet, Annex 2(g) then clarifies that for a government expenditure to properly fall within the "general services" exemption it must be limited to "construction" costs and cannot include subsidies for "operating costs" or "preferential user charges." It is well established that the Bureau of Reclamation has provided and does provide preferential undermarket water pricing for agricultural irrigation as compared with other non-farming users of CVP water, and the 2004 Environmental Working Group Report found that current CVP irrigation pricing continued subsidizing "operational" as well as "construction" costs. These considerations suggest that, even though the CVP contains water supplies facilities and dams, there are particular aspects of the undermarket irrigation pricing in the Bureau of Reclamation's water delivery contracts that place such pricing outside Annex 2(g)'s "general services" exemption.

The extent to which the WTO Agreement on Agriculture's Annex 2(g) might serve as a guide to interpreting the WTO Subsidies Agreement's "general infrastructure" exemptions remains an open question at this point.

#### **4. Non-Farming CVP Beneficiaries**

To the extent the sole purpose of the CVP was to deliver irrigation to private farms for crop production, the analysis above suggests that there would be a strong basis to assert that the CVP irrigation pricing in Bureau of Reclamation water delivery contracts meets the WTO Subsidies Agreement's "specificity" requirement and that such pricing also falls outside the scope of the WTO Subsidies Agreement's "general infrastructure" exemption. Moreover, the analysis above further suggests that there would be a credible basis to assert that the undermarket CVP irrigation pricing should be characterized as "revenue otherwise due" under the WTO Subsidies Agreement. This line of reasoning is complicated, however, by the fact that the sole purpose of the CVP is not simply to deliver irrigation to private farms for crop production.

As noted in both the 2004 Environmental Working Group Report and the 2008 Delta Vision Task Force Report, the Bureau of Reclamation also delivers CVP water to cities for municipal use (drinking water, toilets, etc). The CVP's dams, canals and pumps therefore also serve water to these non-farming beneficiaries. There is little doubt that a government may subsidize the provision of municipal water to its citizens for personal consumption (or even provide such municipal water free of charge to its citizens) without running afoul of the WTO Subsidies Agreement. To hold otherwise would, among other things, run counter to emerging recognition of a right to water for basic human needs (such as hydration). In the case of the CVP, the question that arises is therefore whether the fact that the CVP facilities also provide water to municipal, non-farming beneficiaries for personal consumption somehow places all CVP pricing outside the WTO Subsidies Agreement.

Based on the analysis and findings in the 2004 Environmental Working Group Report and the 2008 Delta Vision Task Force Report, the vast majority of CVP water is delivered to Central Valley farms for irrigation rather than to cities for municipal use, and the Bureau of Reclamation has therefore allocated the vast majority of cost repayment responsibility to Central Valley farmers. The delivery of a small percentage of CVP water to cities for municipal use (whose pricing may well fall outside the scope of the WTO Subsidies Agreement) does not appear to provide proper legal grounds to also place CVP irrigation pricing outside the scope of the WTO Subsidies Agreement. In the context of the WTO Subsidies Agreement, it is not the CVP "as a whole" that would be challenged as an actionable subsidy. Rather, the subject of this WTO challenge would be the particular undermarket pricing of irrigation for Central Valley farms in CVP water delivery contracts.

#### **IV. The Prospect of Applying WTO Subsidy Disciplines to Water for Farm Irrigation**

This paper has evaluated the potential application of the WTO Subsidies Agreement's foregone revenue provisions to CVP irrigation pricing, and determined that there may be a credible if not a strong legal basis for a WTO member country to allege that CVP irrigation pricing qualifies as an actionable subsidy for which countervailing measures may properly be imposed against the United States. The likely WTO member country to bring such a challenge against CVP irrigation pricing would be a country that grows the same crops (such as

cotton, rice or alfalfa) as the Central Valley farmers that receive CVP water, as this country would be well-positioned to establish the “injury” necessary to support the imposition of countervailing measures under the WTO Subsidies Agreement.

It is foreseeable that the United States might respond to such a WTO challenge by noting that under the terms of longterm water delivery contractors the Bureau of Reclamation is contractually obligated (under domestic law) to provide CVP irrigation at such undermarket prices. The United States' contention here might well be correct, but the fact that the Bureau of Reclamation may have opted to enter into longterm contracts with California farms to provide subsidized water should not immunize such undermarket pricing from being characterized as an actionable amber light subsidy under the WTO Subsidies Agreement. Per WTO rules, an otherwise actionable subsidy is not rendered non-actionable merely because it is implemented pursuant to contracts between the government and the party receiving the subsidized benefit.

Although this paper has focused on the CVP irrigation pricing in the United States, much of the reasoning and analysis contained herein may be equally applicable to other WTO member countries that provide undermarket water to domestic farmers. Permitting recourse to WTO rules to address the problem of subsidized irrigation holds the prospect not only of addressing fairness considerations between WTO trading nations, but also the prospect of reducing wasteful irrigation practices, shifting to production of less water intensive crops more compatible with local hydrology, and discontinuing the farming of land only marginally suitable for crop production. This, in turn, could make additional water available for instream use to sustain fisheries and/or to supplement already strained municipal drinking water supplies. Equity, ecosystems and public health may therefore all be well served under such a scenario.

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