

WTO RECOURSE FOR RECLAMATION IRRIGATION
SUBSIDIES: UNDERMARKET WATER PRICES AS FOREGONE
REVENUE

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There are competing demands for fresh water. Farms look to it as an irrigation source, cities rely on it for drinking water, and fisheries (and fishermen) depend on it for instream flow. When the United States Bureau of Reclamation (“Reclamation”) subsidizes the costs of providing fresh water for irrigation in agricultural production, such subsidization can result in tiered water pricing. With tiered pricing, farms pay the government less per unit than other water users. This tiered pricing can distort the water marketplace in a manner that encourages wasteful irrigation practices and leaves insufficient water instream for fisheries. The dispute over Reclamation irrigation subsidies may now be moving from the domestic to the international arena. The 1994 World Trade Organization Agreement on Subsidies and Countervailing Measures (“WTO Subsidies Agreement”) provides that one WTO member country may impose countervailing measures against another WTO member country that makes a “financial contribution” that is specific to “certain enterprises.”¹ The WTO Subsidies Agreement further provides that “government revenue . . . otherwise due [that] is forgone” can qualify as a “financial contribution” and that governments must be paid “adequate remuneration” for goods provided.² This article assesses the potential applicability of the WTO Subsidies Agreement’s foregone revenue and adequate remuneration provisions to Reclamation irrigation subsidies, with an initial focus on such applicability to Reclamation’s Central Valley Project (“CVP”) in California.

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¹ See Agreement on Subsidies and Countervailing Measures arts. 1, 2, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1869 U.N.T.S. 14 [hereinafter Agreement on Subsidies].

² Agreement on Subsidies arts. 1.1, 14.

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I. SUBSIDIZED FARM IRRIGATION — FULL COST AND REAL PRICE

In the arid west of the United States in the early 1900s, the chief constraint on agriculture was the scarcity of freshwater resources.³ In

³ ROBERT DE ROOS, *THE THIRSTY LAND: THE STORY OF THE CENTRAL VALLEY PROJECT* 3 (1948) (“But the tough, basic, all-important problem is water. California is a semiarid state. Without water it is not much. Water is its life force. Water is the limiting factor in the growth of its great cities and in the productivity of its land California’s great struggle in its fight for growth and prosperity is to find ways to use every drop of the available water, to allow none to go waste.”); see also *The Bureau of Reclamation: A Very Brief History*, U.S. DEP’T OF THE INTERIOR, <http://www.usbr.gov/history/borhist.html> (last visited Apr. 1, 2014) [hereinafter *The Bureau of Reclamation*].

many areas of the western United States, rainfall is inadequate for dry farming.⁴ In recognition that the creation of large scale works for the storage and delivery of water was necessary to put more of the lands of the arid west into agricultural production, Congress enacted the Reclamation Act in 1902.⁵ The 1902 Reclamation Act created the United States Reclamation Service, which was renamed the United States Bureau of Reclamation (“Reclamation”) in 1923.⁶

The portfolio of Reclamation irrigation projects in the arid west is extensive. The portfolio includes: the Rio Grande Project in New Mexico (comprising Caballo Dam, Elephant Butte Dam, Percha Diversion Dam, Leasburg Diversion Dam, Mesilla Diversion Dam, American Diversion Dam and Riverside Diversion Dam);⁷ the Salt River Project in Arizona (comprising Theodore Roosevelt Dam, Horse Mesa Dam, Mormom Flat Dam, Stewart Mountain Dam, Bartlett Dam and Hoseshoe Dam);⁸ the Boulder Canyon Project in Arizona and Nevada (comprising Hoover Dam);⁹ the Newlands Project in Nevada (comprising Lake Tahoe Dam, Lahontan Dam, Carson River Diversion Dam and the Derby Diversion Dam);¹⁰ the Parker-Davis Project in California (comprising Parker Dam and Davis Dam);¹¹ and the Central Valley Project in California (comprising Shasta Dam, Friant Dam, Folsom Dam, Contra Loma Dam, Martinez Dam, Franchi Dam and San Luis Dam).¹²

Of these projects, the Central Valley Project (“CVP”) in California is the largest irrigation water supply project constructed and operated by Reclamation.¹³ Construction of the CVP began in the late 1930s,¹⁴ but

⁴ *The Bureau of Reclamation*, *supra* note 3.

⁵ *Id.*; Act of June 17, 1902, ch. 1093, 32 Stat. 388.

⁶ *The Bureau of Reclamation*, *supra* note 3.

⁷ *Rio Grande Project*, U.S. DEP’T OF THE INTERIOR, https://www.usbr.gov/projects/Project.jsp?proj_Name=Rio+Grande+Project (last updated May 16, 2011).

⁸ *Salt River Project*, U.S. DEP’T OF THE INTERIOR, http://www.usbr.gov/projects/Project.jsp?proj_Name=Salt+River+Project (last updated Aug. 19, 2011).

⁹ *Boulder Canyon Project-Hoover Dam*, U.S. DEP’T OF THE INTERIOR, http://www.usbr.gov/projects/Project.jsp?proj_Name=Boulder+Canyon+Project+-+Hoover+Dam (last updated Feb. 1, 2012).

¹⁰ *Newlands Project*, U.S. DEP’T OF THE INTERIOR, http://www.usbr.gov/projects/Project.jsp?proj_Name=Newlands+Project (last updated May 11, 2011).

¹¹ *Parker-Davis Project*, U.S. DEP’T OF THE INTERIOR, https://www.usbr.gov/projects/Project.jsp?proj_Name=Parker-Davis%20Project (last updated May 11, 2011).

¹² *Central Valley Project*, U.S. DEP’T OF THE INTERIOR, https://www.usbr.gov/projects/Project.jsp?proj_Name=Central+Valley+Project (last updated Mar. 15, 2013).

¹³ CHRIS EDWARDS & PETER J. HILL, CUTTING THE BUREAU OF RECLAMATION AND REFORMING WATER MARKETS 5 (2012), *available at* <http://www.downsizinggovernment.org/sites/downsizinggovernment.org/files/pdf/interior-cutting-bureau-reclamation.pdf>.

the project has grown to include twenty dams with a combined storage capacity of approximately eleven million acre feet (“AF”) and approximately 500 miles of canals and aqueducts.¹⁵ Although a small percentage of CVP water is delivered to municipal water agencies, the vast majority of CVP water is delivered to contractors for agricultural irrigation.¹⁶ 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 in the Sacramento Valley.¹⁷ Collectively, the San Joaquin Valley and the Sacramento Valley comprise what is commonly referred to as California’s Central Valley, which stretches vertically 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 instream to provide habitat to sustain salmon, steelhead trout and smelt.¹⁸ This instream use is sometimes accomplished through purchases from Reclamation of CVP water via the Environmental Water Account (“EWA”), a governmental entity established in the 1990s to help restore declining fisheries.¹⁹

Reclamation establishes the price for delivery of CVP irrigation water through long-term water delivery contracts. The contract prices set by Reclamation for delivery of irrigation water have been and remain well below the prices necessary for Reclamation to recoup its initial construction costs or cover ongoing operation and maintenance (“O&M”) costs.²⁰ Moreover, the price paid by Central Valley farmers for CVP water is much less than the price paid by California cities for CVP water, and much less than the price paid by the EWA for CVP water to remain instream.²¹ The CVP’s tiered pricing has enabled California farms to maintain a secure supply of inexpensive irrigation from the federal government, which has facilitated the planting of such

¹⁴ Eric A. Stene, *The Central Valley Project, Introduction*, U.S. DEP’T OF THE INTERIOR, <http://www.usbr.gov/history/cvpintro.html> (last visited Apr. 1, 2014).

¹⁵ DELTA VISION TASK FORCE, OVERVIEW ON CENTRAL VALLEY PROJECT FINANCING, COST ALLOCATION, AND REPAYMENT ISSUES 4 (2008), available at http://deltavision.ca.gov/ConsultantReports/CVP_Financing_and_Repayment_Summary_9-18-08.pdf.

¹⁶ *Id.* at 16.

¹⁷ *Id.*

¹⁸ *Id.* at 4; PAT BRANDES & JIM WHITE, ENVIRONMENTAL WATER ACCOUNT EXPENDITURES FOR CHINOOK SALMON IN WATER YEAR 2005 (2005), available at http://www.science.calwater.ca.gov/pdf/ewa/EWA_Brandes_Salmon_Actions_113005.pdf.

¹⁹ *California Water Subsidies: Findings*, ENVTL. WORKING GRP. (Dec. 15, 2004), <http://www.ewg.org/research/california-water-subsidies/findings> [hereinafter *California Water Subsidies: Findings*].

²⁰ *Id.*

²¹ *Id.*

water intensive crops as alfalfa and cotton in the Central Valley and has also provided incentives to grow crops on lands that are only marginally suited for farming due to poor drainage conditions.²²

Reclamation's undermarket irrigation pricing in general, and CVP subsidization of irrigation for Central Valley farms in particular, has been the subject of domestic criticism in the United States (and attempts at domestic reform) for several decades.²³ Some of this domestic criticism has come from free market advocacy groups generally associated with the political right.²⁴ For instance, in 2012, the conservative Cato Institute released a paper titled *Cutting the Bureau of Reclamation and Reforming Water Markets*, which noted:

The CVP is Reclamation's largest irrigation project, providing roughly 6,800 farmers irrigation water for about 3 million acres of land. The farmers receive the water at roughly 10 percent of its market value, which in 2002 worked out to an annual subsidy of about \$416 million a year . . . Who benefits from all these federal subsidies? Generally, it's a small number of large farm businesses and landowners. In the CVP the subsidies are heavily slanted toward the largest farms. The largest 10 percent of farms (roughly 700 farms) in the CVP receive about two-thirds of the project's entire water supply. . . . Thus, to a substantial extent, subsidized irrigation farming in the West is "corporate welfare," which comes at the expense of average taxpayers, citizens, and the environment.²⁵

Beyond the CVP critiques focused on the large agribusiness interests that receive the lion-share of project water, there have been other critiques as well.

Domestic criticism of Reclamation and CVP irrigation pricing has also come from fishery conservation and environmental groups generally associated with the political left, who have focused on how Reclamation's CVP freshwater diversions have adversely impacted California's native fisheries by reducing instream flow, and how undermarket Reclamation CVP irrigation pricing has led to the farming of lands without adequate drainage. For instance, in a 2004 report titled *California Water Subsidies*, the Environmental Working Group found:

²² *Id.*

²³ *Id.*

²⁴ EDWARDS & HILL, *supra* note 13, at 5–6.

²⁵ *Id.*

By allowing the planting of water-intensive crops such as rice, cotton and alfalfa in what is naturally a desert, [the CVP] has discouraged the efficient use of water.

.....

This inefficiency means less water for wildlife and urban users. Wildlife in particular has paid the price. Of 29 fish species native to the Sacramento and San Joaquin Rivers and the Bay-Delta, two are extinct, six are endangered, five are rare and nine others are declining.

Cheap water has also made feasible the continued farming of land unsuited for irrigation because of serious drainage and toxicity problems. One of the worst environmental disasters in the state's history, the mass death of migratory birds at the Kesterson National Wildlife Refuge in Merced County, was the result of toxic salts in the soil carried downstream by irrigation runoff.²⁶

Urban water users, who are less closely aligned with either the political left or the political right, have also criticized Reclamation irrigation pricing. In the 2013 edition of their book *Legal Control of Water Resources*, Professors Barton Thompson, John Leshy and Robert Abrams observed: "City residents have wondered why they are paying several hundreds of dollars per acre foot for their water while most farmers are paying water rates in the double digits."²⁷

Beyond the domestic criticism, an international trade dimension is now also emerging in the debate over Reclamation irrigation subsidies.²⁸ 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").²⁹ The WTO Subsidies Agreement establishes what is referred to as a "traffic light" system, which categorizes subsidies as either permitted subsidies (green light), prohibited subsidies

²⁶ *California Water Subsidies: Findings*, *supra* note 19; see also Lloyd G. Carter, *Reaping Riches in a Wretched Region: Subsidized Industrial Farming and Its Link to Perpetual Poverty*, 3 GOLDEN GATE U. ENVTL. L.J. 5, 19–13 (2009).

²⁷ BARTON H. THOMPSON, JOHN D. LESHY & ROBERT H. ABRAMS, *LEGAL CONTROL OF WATER RESOURCES: CASES AND MATERIALS* 837 (West 5th ed. 2013).

²⁸ See Richard Steinberg & Timothy E. Josling, *When the Peace Ends: The Vulnerability of EC and US Agricultural Subsidies to WTO Legal Challenge*, 6 INT'L ECON. L. 369 (2003).

²⁹ MARC BENITAH, *THE LAW OF SUBSIDIES UNDER THE GATT/WTO SYSTEM* 2–3 (Kluwer Law Int'l ed., 2001); see generally Agreement on Subsidies.

(red light) or actionable subsidies (amber light).³⁰ 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 they can show evidence of injury.³¹ 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).³² Under the WTO Subsidies Agreement, the category of actionable subsidies includes “government revenue . . . otherwise due [that] is foregone” or government provision of goods and services without “adequate remuneration.”³³ Thus, foregone revenue or inadequate remuneration 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.³⁴

The question explored in this article is whether Reclamation’s undermarket prices for irrigation water falls within the scope of the forgone revenue and adequate remuneration provisions of the WTO Subsidies Agreement. This broader question, which touches on Reclamation’s general irrigation price policies and on Reclamation projects throughout the United States, is approached initially through a case study of WTO compliance issues pertaining to Reclamation’s CVP irrigation pricing. The article’s analysis regarding the CVP is then placed in the context of Reclamation’s national water project portfolio, with guidance on how the article’s mode of analysis as to CVP WTO compliance issues might serve as a blueprint for assessing the applicability of WTO subsidy disciplines to irrigation pricing for other Reclamation projects.

II. RECLAMATION IRRIGATION PRICING AND THE CENTRAL VALLEY PROJECT (“CVP”)

In 2008, the Governor of California’s Delta Vision Task Force released its report on CVP financing and repayment.³⁵ This report began by setting the geographic and hydrological context, noting:

³⁰ Agreement on Subsidies pts. I–IV; KEVIN KENNEDY, *INTERNATIONAL TRADE REGULATION: READINGS, CASES, NOTES AND PROBLEMS* 608 (Wolters Kluwer ed., 2009).

³¹ Agreement on Subsidies art. 11.2.

³² Agreement on Subsidies art. 19.

³³ Agreement on Subsidies arts. 1.1(a)(1)(ii), 14; BENITAH, *supra* note 29, at 47; KENNEDY, *supra* note 30, at 609.

³⁴ Agreement on Subsidies art. 19; BENITAH, *supra* note 29, at 81–82; KENNEDY, *supra* note 30, at 609.

³⁵ DELTA VISION TASK FORCE, *supra* note 15.

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 total Valley precipitation and is prone to severe flooding[,] while the southern end receives only one-third of the precipitation (and is prone to drought).³⁶

The primary purpose of 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, and canals) that would create new irrigation supplies for agriculture in the southern end of the valley.³⁷ 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.³⁸

In 1948, Robert de Roos published his book The Thirsty Land: The Story of the Central Valley Project, which offers an account of the motivations of early CVP proponents that captures the boosterish tenor of Reclamation activity during this period:

Nature, which delivers water only during the winter and spring, provides too much water in Sacramento Valley and not enough in the San Joaquin. Two-thirds of the rain and snow of northern California fall in the Sacramento watershed, and the Sacramento Valley has only one-third of the arable land of the two valleys. And only one-third of the rain and snow reaches the San Joaquin Valley, which has two-thirds of the arable land.³⁹

After setting this broader geographic and hydrologic stage, de Roos then explains the underlying *raison d'être* for those that proposed, designed and built the CVP:

These great dams and canals and the sizable power system have one objective: to shift water from the Sacramento Valley where

³⁶ *Id.*

³⁷ DE ROOS, *supra* note 3, at 8.

³⁸ DELTA VISION TASK FORCE, *supra* note 15, at 3; *California Water Subsidies: Findings*, *supra* note 19.

³⁹ DE ROOS, *supra* note 3, at 4.

there is too much, to the San Joaquin Valley, where there is too little. Simply stated, the Central Valley Project is a north-to-south water exchange. The available water of the San Joaquin River, which normally flows north into San Francisco Bay and the sea, is diverted to the dry acres of the southern valley. Sacramento River water[,] which ordinarily would wash out the Golden Gate, is shifted to the central San Joaquin Valley to replace the San Joaquin River water diverted to the south.⁴⁰

The federal Reclamation Project Act of 1939 (“RPA”) set forth the initial authority and structure for Reclamation to recover its investment in constructing, operating and maintaining authorized water projects.⁴¹ The RPA provided for Reclamation to enter into long-term “water service contracts” (often for 40 years) for projects, such as the CVP, that provided multiple facilities benefiting many contractors.⁴² Under the RPA, costs are allocated to and recovered from beneficiaries based on the amount of water received as measured in “acre feet” (“AF”) of water.⁴³

The prices charged to Central Valley farmers by Reclamation pursuant to RPA water delivery contracts, however, fell far short of such cost recovery.⁴⁴ The reasons for this shortfall were noted in 2005 by Nathalie Bernasconi-Osterwalder of the Center for International Environmental Law (“CIEL”).⁴⁵ 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 various ways. It incorporated a two-stage subsidy in the way its 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

⁴⁰ DE ROOS, *supra* note 3, at 8.

⁴¹ DELTA VISION TASK FORCE, *supra* note 15, at 7.

⁴² *Id.*

⁴³ *Id.*

⁴⁴ CONG. BUDGET OFFICE, HOW FEDERAL POLICIES AFFECT THE ALLOCATION OF WATER (Aug. 2006), available at <http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/74xx/doc7471/08-07-waterallocation.pdf>; Nathalie Bernasconi-Osterwalder, *Water, Agriculture, and Subsidies in the International Trading System*, in *FRESH WATER AND INTERNATIONAL ECONOMIC LAW* 207, 211–12 (Oxford University Press 2005).

⁴⁵ Bernasconi-Osterwalder, *supra* note 44.

nearly \$100 million for seventeen projects alone. The annual irrigation subsidies for the United States from such underpricing have been estimated at between \$2 billion and \$2.5 billion.⁴⁶

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 crops 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.⁴⁷

Similar findings were made in a 2006 paper prepared by the Congressional Budget Office ("CBO"), titled *How Federal Policies Affect the Allocation of Water*.⁴⁸ The 2006 CBO paper reported:

Subsidies by the Bureau of Reclamation have reduced the prices that irrigators pay for water. In constructing western water projects, with the original aim of encouraging settlement, the federal government spent \$24.0 billion (in nominal dollars) from 1902 to 2004. Under reclamation law, \$19.3 of that is "reimbursable"—to be repaid by the projects' beneficiaries. Irrigators are responsible for 46 percent of the total, with power users followed by municipal and industrial waters users responsible for the rest. Determinations by the federal government that irrigators were not able to pay shifted \$2.9 billion of their \$8.9 billion debt to other project beneficiaries, primarily power users. Also, lawmakers, through specific legislation, and the courts subsequently reclassified \$2.7 billion of irrigators' debt as nonreimbursable. As of 2004, irrigators had repaid \$1.3 billion of their remaining \$3.3 billion debt.

⁴⁶ *Id.*; see also, Coby Graham, From Dam to Dirt: The Need to Revisit the CVPIA and Promote Public Ownership of CVP Water 7 (2013) (unpublished student paper, Golden Gate University) (on file with author) ("[I]rrigators are not required to pay interest on the cost of construction. This means that, as the cost of money increases over time related to the outstanding debt owed by the contractors, the repayment amount by the irrigators eventually accounts for less and less of the actual cost of the project, as well as the cost to finance the project.").

⁴⁷ Bernasconi-Osterwalder, *supra* note 44, at 212.

⁴⁸ CONG. BUDGET OFFICE, HOW FEDERAL POLICIES AFFECT THE ALLOCATION OF WATER (Aug. 2006), available at <http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/74xx/doc7471/08-07-waterallocation.pdf>.

For irrigators, the Bureau of Reclamation bases its water supply charges on recovering the associated capital costs and operation and maintenance (O&M) costs for the federal facilities. Irrigators' interest-free payments—which are due over a 40- or 50-year period—do not incorporate the opportunity costs of the federal expenditures. Over a 40-year repayment period at a borrowing cost of 4 percent annually, the government recovers only 49 percent of its true cost. In some instances, the reimbursable costs of existing reclamation projects have yet to be recovered and water users' payment may not even cover O&M costs.⁴⁹

The 2006 CBO paper continued:

California's Central Valley Project—the country's largest water supply project—began deliveries in 1940 and was completed in 1979. Irrigators are responsible for paying \$1.3 million of the project's federal construction cost of \$3.6 billion (in nominal dollars). Originally, irrigators had renewable 40-year water service contracts that provided for water deliveries but not necessarily for repaying the \$1.3 billion by the end of the contract term. The Bureau of Reclamation intended for the contract prices to cover only operation and maintenance (O&M) expenses and a portion of construction costs. However, the prices were not even sufficient to cover O&M expenses, which increased over time. Deficits accrued . . . and no payments were made for construction costs. . . . [A]s of September 30, 2004, irrigators had met 14.2 percent of their total repayment obligation.⁵⁰

The 2012 Cato Institute report, discussed above, echoed these findings, observing:

One early decision by the Bureau of Reclamation led to large investment inefficiencies for much of the 20th century. The 1902 legislation state[s] that “charges shall be determined with a view of returning to the reclamation fund the estimated cost of construction of the project.” In interpreting this, the Bureau decided to exclude interest costs, so that project beneficiaries would be required to pay back only the original project costs over time. The effect was to greatly reduce the real value of repayments, thus creating large subsidies on Reclamation projects⁵¹

⁴⁹ *Id.* at 5–6.

⁵⁰ *Id.* at 7.

⁵¹ EDWARDS & HILL, *supra* note 13, at 3.

....

Agriculture has received by far the largest subsidies from Reclamation projects. In calculating repayment requirements, Reclamation allocates substantial costs related to irrigation to other project beneficiaries, such as power customers and urban water customers. Also, a law change in 1939 allowed the bureau to reduce costs to irrigators on the basis of "ability to pay," which has saved farmers billions of dollars over the decades.⁵²

In response to criticisms regarding the lax repayment/cost recovery terms in the CVP water delivery contracts entered into by Reclamation, the federal Central Valley Improvement Act ("CVPIA") was enacted in 1992.⁵³ 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 undermarket.⁵⁴ For instance, the 2004 Environmental Working Group report *California Water Subsidies* (discussed above) 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 from 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 farmers exceeds the actual amount they paid in 2002, about \$48 million. That means CVP water users are

⁵² *Id.* at 4.

⁵³ Central Valley Project Improvement Act, Pub L. No. 102-575, tit. XXXIV, 106 Stat. 4600, 4706 (1992); DELTA VISION TASK FORCE, *supra* note 15; *California Water Subsidies: About the Central Valley Project*, ENVTL. WORKING GRP. (Dec. 15, 2004), <http://www.ewg.org/research/california-water-subsidies/about-central-valley-project> [hereinafter *California Water Subsidies: About the Central Valley Project*].

⁵⁴ DELTA VISION TASK FORCE, *supra* note 15; *California Water Subsidies: About the Central Valley Project*, *supra* note 53.

getting a minimum discount of 55 percent below market value, ranging up to almost 90 percent, for the water they receive.⁵⁵

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 by a large margin to repay or reimburse 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 30, 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.⁵⁶

Irrigation subsidies are sometimes defined using the “cost recovery” method. This method defines an irrigation subsidy as the net value of government expenditures that benefit irrigating farmers and the revenues from water charges paid by the irrigators to the government.⁵⁷ This calculation of irrigation subsidies under the cost recovery methodology should take into 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 fixed over time.⁵⁸

The fact that Reclamation’s CVP reservoirs, pumps and canals were constructed in phases over many decades, and that the prices charged by 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

⁵⁵ *California Water Subsidies: Findings*, *supra* note 19.

⁵⁶ DELTA VISION TASK FORCE, *supra* note 15, at 15–16.

⁵⁷ *California Water Subsidies: Methodology*, ENVTL. WORKING GRP. (Dec. 15, 2004), <http://www.ewg.org/research/california-water-subsidies/methodology> [hereinafter *California Water Subsidies: Methodology*].

⁵⁸ Bernasconi-Osterwalder, *supra* note 44, at 210.

Task Force in 2008, however, the complexity of this calculation is not insurmountable, particularly in the light of the extensive CVP cost and pricing information that Reclamation is required to publish.⁵⁹

Whether 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 is strong evidentiary support for the conclusion that Reclamation's current CVP pricing for irrigation deliveries to California farms meets standard notions of a subsidy, and that this irrigation subsidy is 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").⁶⁰ Prior to 1994, the term GATT referred both to the underlying GATT treaty, as well as the ad hoc administrative apparatus that developed to implement and ensure compliance with the GATT treaty.⁶¹ 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.⁶² The WTO Subsidies Agreement builds on traditional notions of subsidies, such as the cost recovery methodology noted above, but also sets forth a 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.⁶³ The first category is "green light" subsidies, which are permitted.⁶⁴ The second category is "red light" subsidies,

⁵⁹ *California Water Subsidies: Methodology*, *supra* note 57; DELTA VISION TASK FORCE, *supra* note 15, at 12; Bernasconi-Osterwalder, *supra* note 44, at 210–11; MONA SUR, DINA AMALI-DEININGER & ARIEL DINAR, WATER-RELATED SUBSIDIES IN AGRICULTURE: ENVIRONMENTAL AND EQUITY CONSEQUENCES 6–12 (2002).

⁶⁰ Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154 [hereinafter Marrakesh Agreement].

⁶¹ Marrakesh Agreement art. II(4); BENITAH, *supra* note 29, at 3.

⁶² KENNEDY, *supra* note 30, at 608.

⁶³ Agreement on Subsidies pts. II–IV; BENITAH, *supra* note 29, at 34–35, 47; KENNEDY, *supra* note 30, at 608.

⁶⁴ Agreement on Subsidies pt. III; BENITAH, *supra* note 29, at 34; KENNEDY, *supra* note 30, at 608.

which are prohibited; members may bring an action before the WTO to compel a member to discontinue these types of subsidies.⁶⁵ For example, certain direct export subsidies are prohibited as red light subsidies.⁶⁶ The third category is “amber light” subsidies, which are “actionable.”⁶⁷ “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 establish that the subsidy caused “injury.”⁶⁸ Such countervailing measures might include equivalent tariffs imposed on the import of goods from the country maintaining the actionable subsidy (tariffs equal to, and that offset, the injury caused by the subsidy).⁶⁹

For example, in 2002 Brazil brought a challenge against the United States before the WTO alleging violations of the WTO Subsidies Agreement in regard to cotton produced in the United States.⁷⁰ Among other things, Brazil alleged that the United States extended price supports and export credits to domestic cotton producers that qualified as actionable amber light subsidies under the WTO Subsidies Agreement.⁷¹ In September 2004, the WTO Dispute Settlement Body issued a panel report siding with Brazil.⁷² Most of the WTO Dispute Settlement Body’s ruling was affirmed in March 2005 by the WTO Appellate Body.⁷³ In August 2009, a WTO arbitration panel determined that Brazil was entitled to impose \$147.3 million in countervailing import tariffs against United States goods.⁷⁴

The Brazil WTO cotton challenge involved direct price supports and export credits for a specific agricultural product (cotton) rather than the indirect “input” subsidization of agricultural products in general via

⁶⁵ Agreement on Subsidies pt. II (regarding prohibited subsidies and available remedies); BENITAH, *supra* note 29, at 47; KENNEDY, *supra* note 30, at 611.

⁶⁶ Agreement on Subsidies arts. 1–3, 5; BENITAH, *supra* note 29; KENNEDY, *supra* note 30, at 611.

⁶⁷ Kennedy, *supra* note 30, at 612.

⁶⁸ Agreement on Subsidies arts. 5, 7; KENNEDY, *supra* note 30, at 612.

⁶⁹ Agreement on Subsidies art. 7; KENNEDY, *supra* note 30, at 612.

⁷⁰ RANDY SCHNEPF, CONG. RESEARCH SERV., RL32571, BRAZIL’S WTO CASE AGAINST THE U.S. COTTON PROGRAM I (2010).

⁷¹ *Id.* at 7–8.

⁷² *Id.* at 12–13.

⁷³ *Id.*

⁷⁴ *Id.* at 20–21. See United States—Subsidies on Upland Cotton (U.S. v. Braz.), WT/DS267/ARB/1 (Aug. 31, 2009); United States—Subsidies on Upland Cotton (U.S. v. Braz.), WT/DS267/ARB/2, (Aug. 31, 2009).

delivery of undermarket irrigation water. However, under the WTO Subsidies Agreement, the category of actionable subsidies appears to include domestic subsidies that are not directly tied to such products. 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.⁷⁵ Article 1 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”; [and] (d) government purchase of goods.”⁷⁶

Article I of the WTO Subsidies Agreement does not set forth a definition of what constitutes “government revenue . . . otherwise due [that] is foregone or not collected.”⁷⁷ However, some guidance on this question may potentially be gleaned from Article 14 of the WTO Subsidies Agreement, which is titled *Calculation of the Amount of a Subsidy in Terms of the Benefit to the Recipient*.⁷⁸ More specifically, Article 14(d) provides:

[A]ny method used by the investigating authority to calculate the benefit to the recipient conferred pursuant to paragraph 1 of Article 1 . . . shall be transparent and adequately explained. Furthermore, any such method shall be consistent with the following guidelines:⁷⁹

. . . .

(d) the provision of goods or services or purchase of goods by a government shall not be considered as conferring a benefit unless the provision is made for less than adequate remuneration, or the purchase is made for more than adequate remuneration. The adequacy of remuneration shall be determined in relation to prevailing market conditions for the good or service in question in the country of provision or

⁷⁵ Agreement on Subsidies arts. 1, 2.

⁷⁶ Agreement on Subsidies art. 1; Bernasconi-Osterwalder, *supra* note 44, at 233.

⁷⁷ Agreement on Subsidies art. 1.1.

⁷⁸ Agreement on Subsidies art. 14.

⁷⁹ *Id.*

purchase (including price, quality, availability, marketability, transportation or other conditions of purchase or sale).⁸⁰

Although Article 14(d) focuses on the question of “calculating” the extent of a good provided without “adequate remuneration” rather than on the existence of an actionable subsidy due to “foregone revenue,” its analytic framework is potentially instructive and relevant. Article 14(d) proposes that the amount of the monetary benefit provided by a subsidy can be appropriately determined with reference to the “prevailing market conditions” for the product in question in the country where the subsidy is provided, and suggests that “price” is a fundamental aspect of such “prevailing market conditions.”⁸¹ If a comparison to prevailing market prices for the good in question is appropriate to determine the benefits of a subsidy, it could be argued that such a comparison may also be appropriate to determine whether or not government revenue is improperly “foregone” pursuant to Article I of the WTO Subsidies Agreement.⁸² Such a parallel approach seems warranted since both inquiries hinge on the question of whether “adequate remuneration” was provided to the government for the supplied good.

As a result of the investigation and findings of the 2004 Environmental Working Group report and the 2008 Delta Vision Task Force report, there is substantial uncontroverted evidence to support the claim that CVP irrigation pricing is not set at levels that enable 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.⁸³ Consistent with the approach suggested in Article 14(d) of the WTO Subsidies Agreement, this claim could be grounded in the great disparity between Reclamation’s CVP irrigation prices and the prevailing California marketplace for non-CVP water.⁸⁴ Before Reclamation’s CVP irrigation pricing is determined to be an actionable subsidy per WTO rules, however, there are additional questions that must be resolved.

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² Agreement on Subsidies art. 1.

⁸³ *California Water Subsidies: About the Central Valley Project*, *supra* note 53; DELTA VISION TASK FORCE, *supra* note 15.

⁸⁴ DELTA VISION TASK FORCE, *supra* note 15, at 42; *California Water Subsidies: About the Central Valley Project*, *supra* note 53.

B. Do Reclamation's CVP Irrigation Subsidies Qualify as Foregone Revenue?

1. Revenue Otherwise Due—Pertinent WTO Cases

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.”⁸⁵ This raises the question of whether “full cost/actual cost” or “market” pricing of CVP irrigation water delivered by Reclamation should be viewed as revenue “otherwise due” that has been “forgone” 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 previous WTO cases provide guidance on the phrase’s potential interpretation in the context of a challenge to Reclamation’s CVP irrigation pricing.

a. WTO Appellate Body FSC Report

In 2002 the WTO Appellate Body issued its Report in *United States—Tax Treatment for Foreign Sales Corporations* (“*WTO Appellate Body FSC Report*”).⁸⁶ 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.⁸⁷ In the *WTO Appellate Body FSC Report*, the narrower and more formalist construction of “revenue otherwise due” proposed by the United States was rejected.⁸⁸ Instead, the WTO Appellate Body held:

[U]nder 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 it 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

⁸⁵ Agreement on Subsidies art. 1.1 (emphasis added).

⁸⁶ Appellate Body Report, *United States—Tax Treatment for Foreign Sales Corporations*, WT/DS108/AB/RW (Jan. 14, 2002) [hereinafter *Tax Treatment Appellate Body Report*].

⁸⁷ *Id.* ¶ 1.

⁸⁸ *Id.* ¶¶ 105–06.

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].”

....

[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.⁸⁹

The *WTO Appellate Body FSC Report* generally affirmed the *WTO Panel FSC Report*’s previous holding that:

To give due 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 an approach would eviscerate the subsidies disciplines in the [WTO Subsidies Agreement].⁹⁰

To the extent the United States may attempt to counter a WTO challenge to Reclamation’s CVP irrigation pricing on the grounds that additional revenue from irrigators is not “otherwise due” because Reclamation has not adopted policies that require the payment of such additional revenues or because applicable Reclamation law and regulations may prohibit such payment, this more narrow formalistic line of reasoning would run counter to the approach endorsed by the *WTO Appellate Body FSC Report*.

If the approach employed by the *WTO Appellate Body FSC Report* were followed in the context of a WTO challenge to Reclamation’s CVP irrigation pricing, the focus would be on the “substantive realities”

⁸⁹ *Id.* ¶¶ 88, 90.

⁹⁰ Panel Report, *United States—Tax Treatment for Foreign Sales Corporations*, ¶¶ 8.37, 8.39, WT/DS108/RW (Aug. 20, 2001) [hereinafter Tax Treatment Panel Report].

of the CVP undermarket pricing, which would presumably employ the approach adopted in the 2004 Environmental Working Group Report and the 2008 Delta Vision Task Force Report.⁹¹ In the case of Reclamation's CVP irrigation pricing, the pertinent "substantive realities" are likely to include the extent of unreimbursed Reclamation 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-à-vis the comparatively low cost CVP water offered to farms.

b. WTO Appellate Body Aircraft Report

The focus on the market price for water to evaluate Reclamation's CVP irrigation subsidies for WTO compliance would also accord with the approach in the WTO Appellate Body Report on *Canada—Measures Affecting the Export of Civilian Aircraft* ("WTO Appellate Body Aircraft Report").⁹² In this decision, which did not directly address the question of "revenue otherwise due," the WTO Appellate Body ruled that the existence of a domestic "benefit" provided 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.⁹³ The approach in the *WTO Appellate Body Aircraft Report* is consistent with the method of subsidy analysis used in the 2004 Environmental Working Group Report to evaluate Reclamation's CVP irrigation pricing. That is, just as in the *WTO Appellate Body Aircraft Report*, the 2004 Environmental Working Group report focused on pricing for the product in question (fresh water) in the broader marketplace.

c. WTO Appellate Body Softwood Lumber Report

As discussed above, Article 14 of the WTO Subsidies Agreement, titled *Calculation of the Amount of a Subsidy in Terms of the Benefit to the Recipient*, provides that a comparison with "prevailing market conditions" can serve as an appropriate basis for determining the extent to which the government provides goods or services to recipients without receiving adequate remuneration.⁹⁴ The interpretation of Article

⁹¹ See *California Water Subsidies: Findings*, *supra* note 19; DELTA VISION TASK FORCE, *supra* note 15.

⁹² Appellate Body Report, *Canada—Measures Affecting the Export of Civilian Aircraft*, WT/DS70/AB/R (Aug. 2, 1999).

⁹³ *Id.* ¶ 157; Bernasconi-Osterwalder, *supra* note 44, at 223.

⁹⁴ Agreement on Subsidies art. 14.

14(d) of the WTO Subsidies Agreement was prominent in the 2003 WTO Appellate Body Report on *United States—Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada* (“*WTO Appellate Body Softwood Lumber Report*”).⁹⁵ This case involved claims that Canada was providing Canadian logging companies access to public forests (via low “stumpage” fees for such logging) at undermarket rates, and that such rates constituted actionable subsidies under the WTO Subsidies Agreement.⁹⁶

The *WTO Appellate Body Softwood Lumber Report* found:

Article 14(d) [of the WTO Subsidies Agreement] establishes that the provision of goods by a government shall not be considered as conferring a benefit unless the provision is made for less than adequate remuneration. . . . Thus, a benefit is conferred when a government provides goods to a recipient and, in return, receives insufficient payment or compensation for those goods.

The question then becomes how to determine whether adequate remuneration was paid for the goods provided by the government. This is dealt with in the second sentence of Article 14(d), which provides that “[t]he adequacy of remuneration shall be determined *in relation to prevailing market conditions* for the good or service in question *in the country of provision*”⁹⁷

. . . .

Although Article 14(d) does not dictate that private prices are to be used as the *exclusive* benchmark in all situations, it does emphasize by its terms that prices of similar goods sold by private suppliers in the country of provision are the primary benchmark that investigating authorities must use when determining whether goods have been provided by a government for less than adequate remuneration. . . . This approach reflects the fact that private prices in the market of provision will generally represent an appropriate measure of the “adequate remuneration” for the provision of goods.⁹⁸

Although confirming that prevailing market prices for the good in question will serve as the “primary benchmark” for determining whether a government has received adequate remuneration for a good

⁹⁵ Appellate Body Report, *United States—Final Countervailing Duty Determination with Respect to Certain Softwood Lumber from Canada*, WT/DS257/AB/R (Jan. 19, 2004).

⁹⁶ *Id.* ¶ 48.

⁹⁷ *Id.* ¶¶ 84–85 (emphasis in original).

⁹⁸ *Id.* ¶ 90 (emphasis in original).

provided, and although confirming that prevailing market prices will “generally represent an appropriate measure” of such adequate remuneration, the *WTO Appellate Body Softwood Lumber Report* recognized that such an approach may not be appropriate in every instance.⁹⁹ More specifically, it noted that in a situation where there are no “prevailing market conditions” for the good due to the overwhelmingly predominant role of government in providing the particular good, comparison to some other reference or methodology may be warranted.¹⁰⁰ The decision discussed potential “alternative benchmarks” but explained that such “alternative benchmarks” were not warranted in this instance because prevailing market conditions and pricing served as an adequate measure. In this regard, the *WTO Appellate Body Softwood Lumber Report* found:

[T]he question thus arises what alternative benchmark, consistent with Article 14(d), could be available in such a situation, for purposes of determining whether the goods have been provided by the government for less than adequate remuneration.

. . . .

We agree with the submission of the participants and third party participants that alternative methods for determining the adequacy of remuneration could include . . . proxies constructed on the basis of production costs.¹⁰¹

In the context of a potential WTO challenge to Reclamation’s CVP irrigation pricing, the *WTO Appellate Body Softwood Lumber Report* may be pertinent in at least two respects. First, the report confirmed that in most situations, prevailing market prices should serve as the benchmark for determining whether the amount paid to the government by the recipients of the benefit of this good constituted adequate remuneration.¹⁰² Second, the report suggested that to the extent the government’s predominate role in providing the particular good makes a comparison to prevailing market prices inappropriate, “production costs” may suffice as an “alternative benchmark.”¹⁰³ In the context of Reclamation CVP water, the “production costs” of providing this water would presumably include both the costs (in current dollars) of

⁹⁹ *Id.*

¹⁰⁰ *Id.* ¶ 101.

¹⁰¹ *Id.* ¶¶ 104–106.

¹⁰² *Id.*

¹⁰³ *Id.* ¶ 105.

constructing CVP facilities and their ongoing operation and maintenance (“O&M”) costs.

d. WTO Cotton Subsidies Report

Another informative case is the 2007 WTO Compliance Panel report in *United States—Subsidies on Upland Cotton* (“*WTO Cotton Subsidies Report*”).¹⁰⁴ In this dispute, Brazil had alleged (among other things) that the United States export credit program for domestically grown cotton amounted to an actionable subsidy under the WTO Subsidies Agreement.¹⁰⁵ In support of this position, Brazil asked the WTO Compliance Panel to take into consideration the minimum premium rates (“MPRs”) provided in the Organization for Economic Cooperation and Development’s (“OECD”) *Arrangement for Officially Supported Export Credits* (“*OECD Export Credit Arrangement*”) as evidentiary support that the pricing under the United States cotton export credit program qualified as an actionable subsidy.¹⁰⁶ Although rejecting the *OECD Export Credit Arrangement* rates as a “legally binding benchmark” to determine whether the United States cotton export credit rates qualified as a subsidy, the WTO Compliance Panel found that, “from an evidentiary standpoint,” the *OECD Export Credit Arrangement* rates provided an indication of whether the United States cotton export credit rates, or GSM 102 fees, were “sufficient to cover the long-term operating costs and losses” of the United States program.¹⁰⁷ As the Compliance Panel explained in the *WTO Cotton Subsidies Report*:

Brazil asks us to take into consideration its comparison of GSM 102 fees with the [OECD Export Credit Arrangement] MPRs as a “qualitative” demonstration that GSM 102 fees are well below the level at which they should be . . . We note that the OECD explains that the Arrangement’s benchmark rates, including MPRs, are set “to ensure that Participants to the Arrangement charge premium rates in addition to interest charges that . . . are not inadequate to cover long-term operating costs and losses associated with the provision of export credits.”¹⁰⁸

. . . .

¹⁰⁴ Panel Report, *United States—Subsidies on Upland Cotton*, WT/DS267/RW (Dec. 18, 2007).

¹⁰⁵ *Id.* at 2.

¹⁰⁶ *Id.* at 167–68.

¹⁰⁷ *Id.* at 168.

¹⁰⁸ *Id.*

The MPRs may thus be regarded as representing an assessment, developed by and agreed upon by the export credit experts of the Participants to the Arrangement, of the premia levels that are necessary to ensure that export credit guarantee programmes cover their long-term operating costs and losses.¹⁰⁹

....

We consider that, in this particular case, because of the magnitude of the difference between the MPRs and GSM 102 fees, the MPRs may provide an indication, on an informed basis, of the fact that the GSM 102 fees are set at a level which is insufficient to cover the long term operating costs and losses of the programme . . . On average, the MPRs are 106 percent above GSM 102 fees.¹¹⁰

The *WTO Cotton Subsidies Report* did not focus specifically on the “foregone revenue” provision of the WTO Subsidies Agreement.¹¹¹ Nonetheless, the *WTO Cotton Subsidies Report’s* willingness to consult outside costing standards (*OECD Export Credit Arrangement* rates) in determining the existence of a subsidy may be pertinent to an evaluation of whether Reclamation’s CVP irrigation pricing is WTO compliant.¹¹² More specifically, the ruling in the *WTO Cotton Subsidies Report* suggests that (in the context of a challenge under the WTO Subsidies Agreement) valuating Reclamation’s CVP irrigation water pricing against accepted outside standards such as cost-recovery methodology or comparative market rates may be appropriate.

Although the *WTO Appellate Body FSC Report*, *WTO Appellate Body Aircraft Report*, *WTO Appellate Body Softwood Lumber Report* and *WTO Cotton Subsidies Report* collectively offer support for the claim that Reclamation’s CVP irrigation pricing qualifies as foregone revenue or inadequate remuneration under the WTO Subsidies Agreement, it is important to note that the issue remains unsettled at present under WTO law. Professor Marc Benitah, in his book *The Law of Subsidies under the GATT/WTO System*, notes the “inherent instability” of the “otherwise due” concept set forth in the WTO Subsidies Agreement, and emphasizes that there may be instances where it is difficult to identify an appropriate “universal set of reference” against which to compare a particular domestic program to

¹⁰⁹ *Id.* at 169.

¹¹⁰ *Id.*

¹¹¹ *See id.*

¹¹² *Id.*

determine the existence or extent of an alleged subsidy.¹¹³ The costing and water market analysis of Reclamation's CVP irrigation pricing provided by the Environmental Working Group (discussed above) might provide the appropriate "universal set of reference" that Professor Benitah suggests may be needed to support a "foregone revenue" WTO claim.

Beyond the challenge of articulating a proper "benchmark" or "universal set of reference" upon which to determine whether Reclamation's CVP undermarket irrigation pricing constitutes a subsidy, a potential WTO case would also need to establish the causal correlation between undermarket CVP irrigation pricing and the displacement (lost market share) of products produced and sold by the country bringing the WTO complaint.¹¹⁴ As Professors Richard Steinberg and Timothy E. Josling noted in their article on the vulnerability of United States agricultural subsidies under WTO rules, there can often be competing or alternative causal explanations for product displacement and lost market share that do not relate to the pricing of products from other nations.¹¹⁵ For instance, there may be fluctuations in demand and supply in certain sectors or at certain periods of time, or distinctions in the quality and characteristics of similar products, which suggest that below market pricing (and therefore the subsidies that resulted in this pricing) played a fairly minimal role in market displacement.¹¹⁶ A more detailed examination of the subsidy-displacement causal component is outside the scope of this article, but for present purposes it suffices to recognize that, for a complaining party to successfully bring a WTO claim based on undermarket CVP irrigation pricing by Reclamation, it would need to establish that this pricing caused them direct and significant economic injury.

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."¹¹⁷ In the context of the CVP, the question is therefore whether Reclamation's undermarket pricing for irrigation to Central Valley farms in water delivery contracts satisfies this "specificity"

¹¹³ BENITAH, *supra* note 29, at 188, 190.

¹¹⁴ See Steinberg & Josling, *supra* note 28, at 389.

¹¹⁵ *Id.* at 391.

¹¹⁶ *Id.* at 389, 391.

¹¹⁷ Agreement on Subsidies art. 2.

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.¹¹⁸

There may be two ways in which Reclamation's CVP irrigation pricing contains 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 seem specific in terms of the location where such water may be delivered and used.¹¹⁹ Second, Reclamation's undermarket CVP irrigation pricing terms are specific to water used in farm irrigation, which is to say in the agricultural sector.¹²⁰ There are different, more expensive, CVP pricing terms for municipal water and water purchased by the Environmental Water Account for instream fisheries.¹²¹ 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 goods and services may be actionable so long as they are not "general infrastructure."¹²² 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 essential

¹¹⁸ Bernasconi-Osterwalder, *supra* note 44, at 227.

¹¹⁹ DELTA VISION TASK FORCE, *supra* note 15; *California Water Subsidies: Executive Summary*, ENVTL. WORKING GRP. (Dec. 15, 2004), <http://www.ewg.org/research/california-water-subsidies> [hereinafter *California Water Subsidies: Executive Summary*].

¹²⁰ DELTA VISION TASK FORCE, *supra* note 15, at 11, 15–16; *California Water Subsidies: About the Central Valley Project*, *supra* note 53.

¹²¹ DELTA VISION TASK FORCE, *supra* note 15, at 11, 15–16; *California Water Subsidies: Findings*, *supra* note 19; *California Water Subsidies: About the Central Valley Project*, *supra* note 53.

¹²² Agreement on Subsidies art. 1.

input in crop production. What remains less clear is whether Reclamation's delivery of CVP water for farm irrigation might properly be characterized as "general infrastructure."

Although the WTO Subsidies Agreement does not elaborate on what constitutes "general infrastructure," the 1994 WTO Agreement on Agriculture offers some potential guidance.¹²³ 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.¹²⁴ 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.¹²⁵ 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.¹²⁶

When applied to Reclamation's CVP irrigation subsidies, the WTO Agreement on Agriculture's Annex 2(g) definition of "general services" does not supply a straightforward determination. On one hand, Annex 2(g)'s specific reference to "water supply facilities" and "dams" suggests that the type of water infrastructure included in the CVP, e.g., dams, canals and pumps, may fall within the "general services" exemption.¹²⁷ Yet, Annex 2(g) goes on to clarify 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 "input," "operating costs" or "preferential user charges."¹²⁸ It is well

¹²³ Agreement on Agriculture, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 2(g), 1867 U.N.T.S. 410 [hereinafter Agreement on Agriculture Annex 2(g)].

¹²⁴ *Id.*

¹²⁵ *See id.*

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ *Id.*

established that Reclamation has provided and does provide preferential undermarket water pricing to agricultural irrigation consumers as compared to other non-farming users of CVP water, and the 2004 Environmental Working Group Report found that current CVP irrigation pricing continued to subsidize “operational” and “construction” costs.¹²⁹ It also appears that irrigation water is a critical input in the production of Central Valley crops, particularly in the more arid San Joaquin Valley.¹³⁰ These considerations suggest that, even though the CVP contains water supply facilities and dams, there are aspects of the undermarket irrigation pricing in Reclamation’s water delivery contracts that place such pricing outside the Annex 2(g) “general services” exemption.¹³¹

The extent to which the WTO Agreement on Agriculture’s Annex 2(g) exemption might serve as a guide to interpreting the WTO Subsidies Agreement’s “general infrastructure” exemptions remains an open question. However, if the Annex 2(g) general services exemption is an accurate guide to how the WTO Subsidies Agreement’s infrastructure exemption may be interpreted, then the undermarket irrigation pricing in Reclamation’s water delivery contracts may be outside the general infrastructure exemption and within the scope of the WTO Subsidies Agreement.

4. Non-Farming Recipients of Reclamation’s CVP Water

To the extent the sole purpose of the CVP was to deliver irrigation to farms for crop production, the analysis above suggests that there is a strong basis to assert that the CVP irrigation pricing in 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. Further, the analysis suggests that there would be a credible basis to assert that Reclamation’s undermarket CVP irrigation pricing should be characterized as “revenue otherwise due” under the WTO Subsidies Agreement. This line of reasoning may be complicated, however, by the fact that the CVP has purposes beyond delivering irrigation to private farms for crop production.¹³²

¹²⁹ *California Water Subsidies: About the Central Valley Project*, *supra* note 53.

¹³⁰ *Id.*

¹³¹ Agreement on Agriculture Annex 2(g).

¹³² DELTA VISION TASK FORCE, *supra* note 15, at 19, 36; *California Water Subsidies: Findings*, *supra* note 19.

As noted in both the 2004 Environmental Working Group Report and the 2008 Delta Vision Task Force Report, Reclamation also delivers CVP water to cities for domestic municipal use (e.g., drinking water).¹³³ The CVP's dams, canals and pumps therefore also serve water to these non-farming beneficiaries.¹³⁴ There appears little doubt that a government may subsidize the provision of municipal water to its citizens for essential drinking water and health (or even provide such municipal water free of charge to its citizens) without running afoul of the WTO Subsidies Agreement.¹³⁵ In this context, the water is not an input to a good that is produced and could be internationally traded. Additionally, to hold otherwise might run counter to the emerging recognition of a right to water for basic human needs such as hydration and sanitation.¹³⁶ In the case of the CVP, the question that arises is therefore whether the fact that Reclamation's CVP facilities also provide some limited water to non-farming beneficiaries somehow places Reclamation's CVP irrigation pricing beyond the reach of 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 Reclamation's CVP water is delivered to Central Valley farms for irrigation rather than to cities for municipal use.¹³⁷ The delivery of a relatively small percentage of CVP water to cities for domestic municipal use (whose pricing may well fall outside the scope of the WTO Subsidies Agreement) does not appear to provide adequate legal grounds to also place Reclamation's CVP irrigation pricing outside the scope of the WTO Subsidies Agreement. In the context of the WTO Subsidies Agreement, it is not Reclamation or the CVP as a whole that would be challenged as an actionable subsidy. Rather, the subject of this WTO challenge would be Reclamation's particular undermarket prices for irrigation for Central Valley farms in CVP water delivery contracts.

¹³³ DELTA VISION TASK FORCE, *supra* note 15, at 19, 36; *California Water Subsidies: About the Central Valley Project*, *supra* note 53.

¹³⁴ DELTA VISION TASK FORCE, *supra* note 15, at 19; *California Water Subsidies: About the Central Valley Project*, *supra* note 53.

¹³⁵ For recognition of the emerging right to water under international law see G.A. RES. 54/175, U.N. GAOR, 54th Sess., U.N. Doc. A/Res/54/175 (Feb. 15, 2000); E.S.C. Res. 29/3, U.N. Doc. E/C.12/2002/11 (Jan. 20, 2003); and G.A. Res. 64/292, U.N. GAOR, 64th Sess., U.N. Doc. A/Res/64/292 (Aug. 3 2010).

¹³⁶ E.S.C. Res. 29/3, U.N. Doc. E/C.12/2002/11 (Jan. 20, 2003); G.A. Res. 64/292, U.N. GAOR, 64th Sess., U.N. Doc. A/Res/64/292 (Aug. 3 2010).

¹³⁷ DELTA VISION TASK FORCE, *supra* note 15, at 22; *California Water Subsidies: About the Central Valley Project*, *supra* note 53.

IV. NOT JUST THE CVP—OTHER RECLAMATION PROJECTS AND PRICES SUBJECT TO WTO RULES

Much of the preceding analysis has centered on the CVP and the extent to which Reclamation's CVP irrigation prices may constitute an actionable amber light subsidy under the WTO Subsidies Agreement. It is critical, however, to situate this CVP specific analysis in the context of not only other Reclamation irrigation projects but also of Reclamation's national irrigation price policies.

A. *WTO Recourse for Other Reclamation Irrigation Projects*

As discussed above, in addition to the CVP, there are many other Reclamation water projects in the arid west of the United States, such as the Rio Grande Project in New Mexico,¹³⁸ the Salt River Project in Arizona,¹³⁹ the Boulder Canyon Project on the Nevada-Arizona Border,¹⁴⁰ the Newlands Project in Nevada,¹⁴¹ and the Parker-Davis Project in California.¹⁴² The basic methodology used in this article to examine whether Reclamation's prices for CVP irrigation water qualify as an actionable WTO subsidy can be employed to examine WTO compliance for other Reclamation projects.

For example, consider the case of Reclamation's Newlands Project. The Newlands Project, formerly known as the Truckee-Carson Project, predates the CVP and its initial components were constructed from 1903–1904.¹⁴³ The project delivers irrigation water to approximately 55,000 acres of Nevada cropland in the Lahontan Valley and benchlands located in Churchill, Lyon, Storey and Washoe counties.¹⁴⁴ In addition to alfalfa, a significant portion of the crops grown with Newlands Project irrigation water are cereal crops, such as barley, wheat and oats.¹⁴⁵ Just as with the irrigation pricing for the CVP, the

¹³⁸ ROBERT AUTOBEE, BUREAU OF RECLAMATION, RIO GRANDE PROJECT (1994), available at http://www.usbr.gov/projects/ImageServer?imgName=Doc_1305577076373.pdf.

¹³⁹ ROBERT AUTOBEE, BUREAU OF RECLAMATION, SALT RIVER PROJECT, available at http://www.usbr.gov/projects/ImageServer?imgName=Doc_1305577664538.pdf.

¹⁴⁰ JOE SIMONDS, BUREAU OF RECLAMATION, HOOVER DAM: THE BOULDER CANYON PROJECT (Brit Storey ed., 2009), available at http://www.usbr.gov/projects/ImageServer?imgName=Doc_1262039261071.pdf.

¹⁴¹ JOE SIMONDS, BUREAU OF RECLAMATION, THE NEWLANDS PROJECT (1996) [hereinafter THE NEWLANDS PROJECT], available at http://www.usbr.gov/projects/ImageServer?imgName=Doc_1305124117489.pdf.

¹⁴² TONI RAE LINENBERGER, BUREAU OF RECLAMATION, PARKER-DAVIS PROJECT (1997), available at http://www.usbr.gov/projects/ImageServer?imgName=Doc_1305126374732.pdf.

¹⁴³ THE NEWLANDS PROJECT, *supra* note 141.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

price for Newlands Project irrigation deliveries is established pursuant to long-term water service contracts with Reclamation, which in turn are established pursuant to the regulatory pricing approach laid out in the 1902 Reclamation Act and the 1939 Reclamation Project Act (with no interest on initial construction costs and periodic reduction in prices due to farms “ability to pay”).

To evaluate whether Reclamation’s Newlands Project irrigation pricing constitutes an actionable amber light subsidy under the WTO Subsidies Agreement, the following information and determinations would be involved: determination of the construction costs (in initial and current dollars) for the Newlands Project infrastructure; the Newlands Project irrigation pricing in water service contracts with Reclamation; a comparison of Reclamation’s Newlands Project irrigation pricing with the construction costs and ongoing O&M costs for the Newlands Project; a comparison of Reclamation’s Newlands Project irrigation pricing with prevailing water marketplace prices in the area that receives water from the project; and identification of whether there are other WTO member nations, such as those that grow and export cereal crops like barley, wheat and oats, that are being adversely impacted by the reduced prices charged by Nevada farms growing and selling these same cereal crops.

The WTO compliance analysis presented in this article can therefore be replicated for other non-CVP Reclamation irrigation projects around the country.

B. WTO Recourse for Reclamation’s General Irrigation Pricing Policies

As noted above, the 1902 Reclamation Act and the 1939 Reclamation Project Act provide the broad national regulatory framework by which Reclamation enters into project-specific supply contracts for irrigation water. This national regulatory structure raises the question of whether, in addition to project-specific potential WTO challenges to Reclamation irrigation pricing, there is legal support to argue that Reclamation’s national irrigation pricing scheme is an actionable subsidy under WTO rules. For two reasons, it is questionable whether a broad WTO challenge to Reclamation along these lines would succeed.

First, as discussed above, there is the hurdle of the “specificity” requirement in Article 2 of the WTO Subsidies Agreement.¹⁴⁶ In the case of a challenge to irrigation pricing for specific Reclamation projects,

¹⁴⁶ Agreement on Subsidies art. 2.

there are distinct geographic areas of farmland that receive the water, such as California's Central Valley in the case of the CVP or Nevada's Churchill, Lyon, Storey and Washoe counties in the case of the Newlands Project. Moreover, the geographic farming region serviced by a particular Reclamation Project often tends to focus on certain particular crops, such as rice and cotton in the case of the CVP or cereal crops in the case of the Newlands Project. With a WTO challenge to Reclamation's general nationwide irrigation pricing scheme, the beneficiaries of such pricing are farms across the entire United States, which grow a wide assortment of crops. A group of beneficiaries defined so broadly in terms of geography and crop selection may not be specific enough to fall within the scope of the pertinent WTO subsidy rules.

Second, as also noted above, an evaluation of the existence and extent of a Reclamation irrigation subsidy may involve a comparison of Reclamation irrigation prices with the "prevailing" water marketplace.¹⁴⁷ In the case of geographically specific Reclamation projects, the prevailing marketplace would presumably be the market for water in the state or sub-state region where lands receiving the Reclamation project water are located. Under a WTO challenge to Reclamation's general nationwide irrigation pricing, it is unclear whether there exists a "national prevailing water marketplace." The high costs associated with the pumping and delivery of water means that it can be prohibitively costly to transport water long distances, and economic and climate variations across the country produce vastly different prevailing water marketplaces between regions. For instance, the prevailing per-acre foot price for irrigation water in an arid state like Arizona would not be the same as the prevailing per-acre foot price for a wetter state like Montana.¹⁴⁸ The absence of a discernible prevailing national water market could be a potential obstacle to a broad WTO challenge to Reclamation's general irrigation pricing policies.

¹⁴⁷ Agreement on Subsidies art. 14.

¹⁴⁸ According to the United States Department of Agriculture, for the year 2008 the average cost of irrigation water in Arizona was \$122.54 per acre while the average cost of irrigation water in Montana was \$14.10 per acre. *Western Irrigated Agriculture: Overview*, UNITED STATES DEPT OF AGRIC., http://www.ers.usda.gov/data-products/western-irrigated-agriculture.aspx#.VA_KON2RdV1Q (last updated Jun. 7, 2013) (follow the hyperlink titled "Table 3-10 Average Purchase Water Costs (\$ Per Acre) for Farms Using Off-Site Surface Water by Farm Size and State for 2008 Irrigated Farms" to download Table 3-10).

V. CONCLUSION—WTO SUBSIDY DISCIPLINES AND THE WASTEFUL USE OF WATER

In the United States, the debate over Reclamation's irrigation prices has so far played out more in the arena of politics and public policy than the law.¹⁴⁹ Regardless of whether the critiques of Reclamation irrigation pricing have come from groups on the political right, such as the Cato Institute, or groups on the political left, such as the Environmental Working Group, the characterization of such pricing as a "subsidy" has been used to convey the view that Reclamation's pricing is unwise and unjustifiable from a policy standpoint.¹⁵⁰ These domestic critiques have not yet alleged that there is a direct and independent legal consequence to the designation of Reclamation's irrigation pricing as a subsidy.

With an eye toward such direct and independent legal consequences, this article has evaluated the potential application of the WTO Subsidies Agreement's foregone revenue and inadequate remuneration provisions to Reclamation irrigation pricing, and determined that there may be a credible legal basis for a WTO member country to allege that Reclamation's irrigation pricing for particular water projects qualifies as an actionable subsidy for which countervailing measures may properly be imposed against the United States. The WTO member country most likely to bring such a challenge against Reclamation in the case of CVP irrigation pricing would grow the same crops as the Central Valley farms that receive undermarket CVP water; such a country would be able to establish the injury necessary to support the imposition of countervailing measures under the WTO Subsidies Agreement.¹⁵¹ For example, as discussed in this article, Brazil is a producer and exporter of cotton along with farms in California's San Joaquin Valley that rely on undermarket CVP water.¹⁵² The injury of a WTO member, such as Brazil, would presumably be established by demonstrating lost market-share to crops (e.g., cotton) produced in the United States that are less expensive as a result of Reclamation's undermarket CVP irrigation pricing.

As discussed herein, this article's mode of analysis for evaluating the consistency of Reclamation's CVP irrigation pricing with WTO subsidy disciplines could also be employed to similarly evaluate WTO

¹⁴⁹ EDWARDS & HILL, *supra* note 13, at 3–4, 6–7; *California Water Subsidies: Executive Summary*, *supra* note 119.

¹⁵⁰ EDWARDS & HILL, *supra* note 13, at 3; *California Water Subsidies: Executive Summary*, *supra* note 119.

¹⁵¹ See Steinberg & Josling, *supra* note 28, at 385.

¹⁵² See *supra* notes 70–74, 106–114 and accompanying text.

compliance for other non-CVP Reclamation water projects in the arid west, such as the Rio Grande Project, the Salt River Project, the Boulder Canyon Project, the Newlands Project and the Parker-Davis Project. For these other Reclamation projects, the pertinent information for such an evaluation would be the pricing of the Reclamation project irrigation supply contracts, the shortfall between the pricing under these contracts and actual Reclamation construction and O&M costs for the project, a comparison of Reclamation pricing in such contracts with the pertinent statewide or regional market prices for water, and whether there is a competing WTO member nation whose domestic producers are being adversely impacted by the reduced prices of United States producers resulting from these particular Reclamation irrigation subsidies.

It is foreseeable that the United States might respond to such a WTO challenge by noting that, under the terms of long-term water delivery contracts, Reclamation is contractually obligated to provide irrigation at such undermarket prices.¹⁵³ The United States' contention here might well be correct, but the fact that Reclamation may have opted to enter into long-term contracts with farms to provide subsidized water (or that the United States Congress enacted laws that sanctioned such subsidization) should not immunize such undermarket prices 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 lawful contracts between the government and the parties receiving the subsidized benefit, or because the subsidy in question was authorized or even mandated pursuant to lawful domestic legislation.¹⁵⁴

Although this article has focused on Reclamation irrigation pricing in the United States, much of the reasoning and analysis contained herein may also be applicable to other WTO member countries that provide undermarket water to domestic farms. Permitting recourse to WTO rules and tribunals to address the problem of subsidized irrigation holds the prospect not only of addressing fairness considerations between WTO trading nations, but also of reducing wasteful irrigation practices, shifting production towards less water intensive crops that are more compatible with local hydrology, and discontinuing the farming of land only marginally suitable for crop production due to poor drainage conditions.¹⁵⁵ These changes could make additional water available for

¹⁵³ See Tax Treatment Appellate Body Report, *supra* note 86, at 669–70.

¹⁵⁴ *Id.* at 670.

¹⁵⁵ Richard Roos-Collins, *Voluntary Conveyance of a Right to Receive a Water Supply from the United States Bureau of Reclamation*, 13 Ecology L.Q. 773, 787 n.58 (1987) (citing E.

instream use to sustain fisheries and supplement already strained urban water supplies.¹⁵⁶ Equity, economic efficiency, and the fisheries sector may therefore benefit from a determination that undermarket CVP irrigation pricing qualifies as an actionable subsidy under WTO rules.

In his 1948 book *The Thirsty Land: The Story of the Central Valley Project*, author Robert de Roos argued that California needed the CVP to “find ways to use every drop of the available water, to allow none to go to waste.”¹⁵⁷ Due to Reclamation’s tiered and undermarket pricing scheme for CVP irrigation water, however, the CVP’s effects have been quite different from what de Roos forecast. By providing farms with inexpensive access to extensive quantities of fresh water, Reclamation’s CVP has itself led to wasteful irrigation practices, the planting of crops inappropriate to the Central Valley’s climate, loss of instream flow to sustain native fisheries, and the farming of land with unsuitable drainage.¹⁵⁸ As a result, there is a growing consensus that much of CVP irrigation water is in fact wasted and that this waste comes at the expense of urban residents’ water access and prices, local ecosystems, and endangered species.¹⁵⁹ The same could be said for many other Reclamation water projects throughout the United States.

From a domestic perspective, recourse to WTO subsidy disciplines can therefore be understood as a potential means of enlisting international trade law to return the CVP specifically, and Reclamation more generally, to their original intended purpose of preventing the wasteful use of scarce freshwater resources.

HEADY ET AL., *AGRICULTURAL WATER DEMANDS—FUTURE WATER AND LAND USE: EFFECTS OF SELECTED PUBLIC AGRICULTURAL AND IRRIGATION POLICIES ON WATER DEMAND AND LAND USE* (1971)).

¹⁵⁶ *Id.* at 787 n.58, 789–790, 798–800.

¹⁵⁷ DE ROOS, *supra* note 3.

¹⁵⁸ *California Water Subsidies: Findings*, *supra* note 19; EDWARDS & HILL, *supra* note 13; Roos-Collins, *supra* note 156, at 787 n.58.

¹⁵⁹ EDWARDS & HILL, *supra* note 13, at 1, 4–5; *California Water Subsidies: Findings*, *supra* note 19; THOMAS H. WILLIAMS ET AL., NAT’L MARINE FISHERIES SERV., STATUS REVIEW UPDATE FOR PACIFIC SALMON AND STEELHEAD LISTED UNDER THE ENDANGERED SPECIES ACT: SOUTHWEST 1 (2011).